



सिखआईआन
CSIR
भारत का नवोद्यम इंजन
The Innovation Engine of India

CSIR-NAL Women's Compendium

Stories of Innovation, Leadership & Sky-High Achievements



Women's Compendium Committee



Chairperson

- **Dr. Anjana Jain**



Committee Members

- **Dr. Hema Singh**
- **Dr. N Chandra**
- **Ms. Anjana Krishnan**
- **Dr. De Manabendra Manindrakumar**
- **Dr. Anju Sharma**
- **Ms. M Sivasakthi**
- **Ms. Vimala Srinivasan**



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Messages



सत्यमेव जयते

डॉ. (श्रीमती) एन. कलैसेल्वी
सचिव, वैज्ञानिक और औद्योगिक अनुसंधान विभाग
महानिदेशक, वैज्ञानिक तथा औद्योगिक अनुसंधान परिषद्
Dr. (Mrs.) N. Kalaiselvi
Secretary, DSIR and Director General, CSIR



Message



सिखाया
विज्ञानं
प्रज्ञानं
वैज्ञानिक

भारत सरकार

विज्ञान एवं प्रौद्योगिकी मंत्रालय
वैज्ञानिक और औद्योगिक अनुसंधान विभाग
वैज्ञानिक तथा औद्योगिक अनुसंधान परिषद्
Government of India
Ministry of Science and Technology
Department of Scientific & Industrial Research
Council of Scientific & Industrial Research

It gives me immense pleasure to learn that CSIR-National Aerospace Laboratories is bringing out the Women's Compendium, an initiative that recognizes and celebrates the strength, perseverance, excellence and contributions of the Nari Sakthi of CSIR-NAL, Bengaluru towards strengthening the STEM ecosystem. I deeply value such efforts that highlight role models and create platforms for dialogue, mentorship and recognition. Empowering women in science is not only a method of equity but also imperative for innovation led growth. The compendium comes at an opportune time, as our Honourable Minister of Science & Technology, Dr Jitendra Singh has announced the theme of National Science Day 2026 as "Women in Science: Catalysing Viksit Bharat." This theme underscores a renewed national commitment to empowering women as leaders, innovators and change makers in science, technology and innovation aligned with the vision of Honourable Prime Minister, Shri Narendra Modi for strengthening Nari Sakthi in STEM. The growing presence and leadership of women across our laboratories, including in critical domains such as in Aerospace research, reflect the progressive outlook and inclusive ethos of CSIR fraternity. This compendium is not merely a documentation of accomplishments; it is a tribute to the dedication, integrity and sustained efforts of women professionals who contribute significantly to scientific advancement.

Women scientists, engineers, technical personnel and administrators at CSIR-NAL have played a pivotal role in strengthening India's Aerospace ecosystem. Their contributions ranging from fundamental research to advanced technology development and machine critical support have substantially supported our national objectives in the civil and defence aerospace sectors. By showcasing these achievements, this initiative will inspire younger generations to pursue careers in STEM and reaffirm our commitment to fostering a fair and supportive professional environment. I commend the leadership of CSIR-NAL and the women's compendium committee for this thoughtful initiative celebrating the journeys of its women's professionals, who gracefully balance professional responsibilities and personal commitments. This compendium will stand as a testament to their achievements and further reinforce a culture of respect, recognition and opportunity.

With best wishes for the success of this publication

February 27, 2026

New Delhi

(N. Kalaiselvi)



डॉ. अभय ए. पाशिलकर, निदेशक
Dr. Abhay A. Pashilkar, Director



Message



सीएसआईआर - राष्ट्रीय वांतरिक्ष प्रयोगशालाएं
(वैज्ञानिक तथा औद्योगिक अनुसंधान परिषद्)
CSIR-National Aerospace Laboratories
(Council of Scientific & Industrial Research)

CSIR-National Aerospace Laboratories has consistently pursued excellence in research, technology development, and national service through the collective efforts of its dedicated workforce. Women professionals have been an integral part of this journey, contributing significantly across scientific, technical, administrative and managerial domains.

This Women's Achievements Compendium brings together a range of accomplishments that reflect competence, perseverance, and leadership. The achievements documented herein underscore the important role played by women in strengthening institutional capabilities and advancing the organisation's mission.

Recognizing and documenting such contributions is essential for building an inclusive and enabling work culture that values merit, diversity, and equal opportunity. An environment that encourages participation and professional growth of women is vital for sustained innovation and organizational progress.

I appreciate the efforts of the Women Compendium Committee for conceptualising and compiling this publication, and I congratulate all the women whose achievements are featured.

I am confident that this compendium will serve as a valuable record of excellence and a source of motivation for the entire CSIR-NAL community.

(Abhay A Pashilkar)
Director, CSIR-NAL

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Message



विक्रम सिंह

Vikram Singh

Sr Controller of Administration

It is both an honour and a necessity to introduce the CSIR NAL Women's Compendium at such a pivotal juncture in our economic history. As we move through 2026, the global workforce is no longer merely "incorporating" women; it is being fundamentally redefined by them. This volume arrives not as a simple tribute, but as a rigorous examination of the role women play as the primary architects of the modern industrial and digital landscapes.

The transition we are witnessing is one of **participation to influence**. Today, the data presented in these pages underscores a more profound reality: gender parity is the ultimate engine of volatility-resistance. In an era of rapid technological disruption and shifting global markets, the unique perspectives and leadership styles of women have proven to be indispensable assets for organizational survival and growth. While we celebrate the rise of women and the narrowing of the global gender pay gap, we must remain clear-eyed about the "unseen labour" and systemic hurdles that persist.

The contributors to this work have captured a moment in time where the old rules of work are being rewritten. They highlight a generation of women who are not just seeking a seat at the table, but are actively redesigning the table itself to be more inclusive, flexible, and human-centric.

As you navigate this collection of insights, I invite you to look beyond the numbers. Read between the lines of the case studies to find the stories of resilience, the strategies for systemic change, and the vision for a future where professional success is decoupled from gendered expectations.

May this work serve as both an inspiration to those currently in the arena and a definitive guide for the leaders of tomorrow

Vikram Singh

Sr Controller of Administration



Message

Dr. Shubha V

Former Distinguished Scientist,
CSIR-NAL (Padma Shri Awardee)

It is a privilege to be associated with the CSIR–NAL Women's Compendium, which highlights the journeys and accomplishments of women who have quietly and consistently shaped the scientific landscape of the laboratory.

My years at CSIR–NAL remain among the most meaningful chapters of my life. The institution nurtured my growth as a researcher and strengthened my conviction that enduring work is built on discipline, sincerity, and inner conviction. Receiving the Padma Shri after my superannuation reaffirmed my belief in Nishkaam Karma—that one must remain devoted to one's duty without attachment to recognition, trusting that sincere effort carries its own lasting value. To the younger colleagues whose profiles appear in this volume, I would say: remain curious, remain courageous, and remain patient. Progress in science is often gradual, but steady commitment shapes both character and legacy. As the Bhagavad Gita teaches:

“Karmanye vadhikaraste ma phaleshu kadachana...”
(Your right is to action alone, never to its fruits.)

I convey my appreciation to those who have brought out this publication and extend my warm wishes to every woman whose work and dedication continue to enrich the scientific community.

Dr. V Shubha
Former Distinguished Scientist,
CSIR-NAL

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Message



डॉ. अंजना जैन
Dr. Anjana Jain

Chief Scientist
Materials Science Division

The Women's Compendium is a tribute to the talent, dedication, and sustained efforts of women who are an essential part of CSIR–National Aerospace Laboratories. This volume brings together narratives that highlight accomplishments across scientific, technical, administrative, and support domains, illustrating the wide-ranging roles undertaken by women within the laboratory.

Over the years, women at CSIR–NAL have demonstrated perseverance, adaptability, and professional strength while balancing varied responsibilities. Their journeys reflect quiet determination and a steadfast pursuit of excellence. Through this compilation, we aim to provide visibility to these journeys and to acknowledge the meaningful impact they have created within our academic and professional ecosystem.

Released on the occasion of International Women's Day, this publication serves as a celebration of collective progress and shared aspirations. It is our hope that the experiences documented here will encourage young professionals to pursue their goals with confidence and resilience.

I extend my heartfelt appreciation to all contributors and members of the Women Compendium Committee whose dedicated efforts have shaped this publication. I warmly congratulate the women featured in this volume and wish them continued success in their endeavours.

Anjana Jain

Chairperson

Women's Compendium Committee

CSIR–NAL



Chief Scientists



Dr. Anjana Jain

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Dr. Anjana Jain, a distinguished material Scientist, has contributed significantly to the development of smart polymer-based materials and their integration into aerospace and defense applications. Her work combines core knowledge of polymer physics with the technological requirements of high-performance systems. A major focus of her research has been the design, development, and characterization of piezoelectric poly(vinylidene fluoride) (PVDF) and its nanocomposites for use in advanced sensor and transducer applications. These innovations have been developed under the support of premier national programs such as NPMASS, NPMICAV, AR&DB, DRDO-GTMAP, and CSIR XIth/XIIth Five-Year Plans, targeting applications in strain and pressure sensing, structural health monitoring (SHM), ultrasonic and vibro-acoustic sensing, energy harvesting, flapping-wing actuation, shock sensing, and anti-icing systems.

A landmark achievement is the indigenous development of PVDF-based accelerometers for India's Light Combat Aircraft (LCA), with prototypes delivered to the Aeronautical Development Agency (ADA) for evaluation and flight certification. The sensor platforms developed by Dr. Jain have been validated by leading R&D and academic institutions including DRDO labs (ARDE, GTRE, STARC-C, NPOL, ADA), IISc (CeNSE, Aerospace), IITs, NPL, and CSIR-NAL. To enable this advanced work, Dr. Jain has conceptualized and developed state-of-the-art infrastructure for PVDF film processing, nanocomposite fabrication, sensor prototyping, and electromechanical testing—laying the foundation for self-reliant and scalable material development pipelines. Dr. Jain has authored over 132 research publications, including 55 papers in peer-reviewed international journals and 77 papers in national and international conferences. She is the inventor in two patents, and a recipient of several national awards recognizing her excellence in science, innovation, and technology leadership. Few of them are: Dr. M. Pancholi Memorial Award (2018), National Awards for Technology innovation by Ministry of Chemicals and Fertilizers (2014), Best Poster Award from Asian Symposium on Materials and processing (2012) and MRSI (2007), Best Women Scientist - NAL award (2007). She is professor in AcSIR, New Delhi, and member of Board of Studies for: AcSIR's "Engineering & Physical Sciences Cluster" and R.V. College of Engineering, Bengaluru. She has guided 17 Phd., M.tech and B.Tech students. She actively contributes to the scientific community through her roles in national boards and advisory committees, as a reviewer for several high-impact international journals, and as an examiner for doctoral theses across premier institutions. She has organized and chaired numerous national and international conferences, and is frequently invited as a keynote and expert speaker at scientific, technical, and strategic forums. Her work has led to technology transfers, IP generation, and high-impact research dissemination, contributing significantly to India's vision of scientific self-reliance and innovation in aerospace and defense technologies.



Anjana Krishnan

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Ms. Anjana is working as a scientist in the 1.2 m and 0.6 m trisonic wind tunnels of NTAF for the past twenty years and is currently the In-charge of the Data Processing & Software Development group of NTAF. She is involved in the aerodynamic characterization of models of several strategic and civilian aerospace programmes of ISRO, DRDL, ADA, ADE, RCI and CSIR-NAL, through wind tunnel testing which helps in generating a huge amount of external cash flow (E.C.F) every year. She has contributed to the success stories of our nation's aerospace programmes, which have a legacy of extensive design optimization in these tunnels, by designing and developing robust, scalable, user-friendly software to generate and analyze aerodynamic data for force & moment measurements, steady & unsteady pressure measurements, air-intake studies for models like GSLV, RLV, SSLV, Gaganyaan configurations for ISRO, LCA (Tejas) for ADA, SARAS for CSIR-NAL, missiles like AKASH, NGARM, LAKSHYA, RUDDRAM, LRSAM, TARA, NASM, DHVANI, VEDA, NIRBHAY, VSHORADS, AGNI, AMOGHA for DRDO and Vikram-1 & Agnibaan for space start-ups.

Ms. Anjana's major contributions include design and development of software for air-intake studies for LCA, SFDR & NIRBHAY; design and development of unsteady pressure data processing program, the output of which is instrumental in qualifying the actual flight hardware of launch vehicles like GSLV, SSLV, LVM3; development of software for generating integrated aerodynamic data for HSP Crew Module (Gaganyaan configuration); Statistical analysis of repeat test results for assessment of wind tunnel data quality; design and development of programs to generate crucial force & moment coefficients for mission-mode sponsored projects and AI-driven wind tunnel applications.

Ms. Anjana has also contributed in developing many in-house applications for automation of divisional activities. She is a member of the team from NTAF which has received appreciation letters from VSSC & DRDL for the work carried out on GSLV and LRSAM respectively. She was an active member in implementing the module, "Modernization of Data Acquisition and Processing Systems", under the Augmentation programme of NTAF, which was awarded the "Special Mention award for outstanding team performance for the exemplary work in Augmentation of wind tunnel facilities", from CSIR-NAL. She has around 35 publications, which include institutional reports, journal articles and conference papers.



Dr. Aruna S T

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Dr. S.T. Aruna is currently working as Head of Surface Engineering Division and Chief Scientist, Surface Engineering Division at CSIR-NAL, Bengaluru, India. She has a Masters Degree in Chemistry from Mysore University (1994) and she secured the first rank and won 4 gold medals. She obtained her Ph.D. from the Indian Institute of Science (IISc), Bangalore in the year 1998. She worked as a postdoctoral fellow at Bar-Ilan University, Israel in the area of dye-sensitized solar cells from 1998-1999. She has authored ~ 150 research papers in international peer-reviewed journals, 12 patents, co-authored a book, coedited 2 books and written 14 book chapters and 4 encyclopedia chapters. Her research papers have been well cited and her publications have an h-index of 45 with more than 11000 citations. Her name features in the list of top 2 per cent of the world scientists. Her current research interests include development of superhydrophobic coatings and plasma-sprayed thermal & environmental barrier coatings for aerospace application, tapecast ceramic substrates for electronics application, nanomaterials, shape memory polymers, oxygen and NO_x sensors and reversible solid oxide fuel cells (SOFCs) for green hydrogen generation.

She has guided 5 Ph.D., 20 M.Tech., 1 postdoctoral and 20 B.Tech. students. One of her review papers has received the best cited paper award twice which was published in Current Opinion in Solid State and Materials Science. She is on the editorial board of Surface Engineering Journal, Transaction of Indian Ceramic Society and Journal and Manufacturing Technology Today. She is the recipient of CSIR-NAL's outstanding award (5 times), NM Sampat award -2016, Pavan Nagpal Memorial award-2019, ISAMPE award-2019, Karnataka state Prof. Satish Dhawan Young Engineer Award-2021, MRSI Medal-2022, Prof. Sasadhar Ray Memorial award for industrial excellence-2023, SMC Distinguished Women Award - 2025, Prof. MD Narasimhan Award-2025 and National Thermal Spray Excellence Award-2025. She has transferred 6 technologies to 5 industries and successfully completed ~25 projects.

She served as the President of the Electrochemical Society of India and she is the Chairperson of ISAMPE, Bengaluru Chapter. She is also the Vice President of the Indian Ceramic Society, Karnataka Chapter.



Dr. Hema Singh

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Dr. Hema Singh has been actively involved in R&D work in the area of Electromagnetics for Aerospace Applications and contributed in various R&D national and international projects. Dr. Singh has total of 26 years of work experience in academic and R&D organizations. The focus area of research of Dr. Singh is indigenous development of stealth technology, one of the critical challenges in the country's self-reliance in strategic sector. She has designed and developed low RCS low-profile phased array and low RCS Electronic Warfare antennas. She has been working on Active RCS reduction, which relates to the real-time RCS reduction and control of aerospace structures. Other contributions of Dr. Singh include EM analysis of propagation in an indoor environment for Boeing USA, RCS estimation and control of electrically large structures, conformal arrays, radar absorbing structures, antenna-radome interactions, THz technologies for antennas and absorbers for high speed communication systems, and AI/ML for metasurface-based structures.

Dr. Singh has authored/co-authored 15 books, 7 book chapters, 3 patents (filed), 7 software copyrights, 590 scientific research papers and technical reports. She has also supervised over 100 graduate projects and postgraduate dissertations.

She has several awards to her Credit, such as (1) IETE - Smt C Ranganayakamma Memorial Award 2025 (2) AeSI Fellow (3) 2024 Distinguished Alumnus Award in Research & Innovation by IIT, BHU, Varanasi (4) IEEE Professional Excellence Award for Women in Engineering in 2024 (5) IEEE Women Technologist of the Year 2020 by IEEE Bangalore Chapter (6) IEEE Senior Member (2020) (7) IETE-Smt Ranjana Pal Memorial Award (2018) and CSIR-NAL Best Woman Scientist Award (2008).



Hemalatha K

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Ms. Hemalatha K., Chief Scientist at the Information Centre for Aerospace Science and Technology (ICASST), CSIR–NAL, holds a B.E. in Computer Science from Bangalore University (1994) and an M.S. in Software Systems from BITS, Pilani (2011). With 29 years of distinguished service at CSIR–NAL, she joined the organization as Scientist-B and rose through various grades to become Chief Scientist in December 2022.

Throughout her career, she has demonstrated strong leadership abilities, having served in several key roles. She headed the Computer Network Support and Services Unit (CNSSU) from 2012 to 2019, led the Telephone Exchange between 2012 and 2024, served as Joint Head of the Aerospace Software and Information Systems Division (ASISD) from 2019 to 2021, and most recently headed ICASST from 2021 to 2025.

Her technical contributions span a wide spectrum of domains, including parallel processing, computer graphics, software development, management information systems, system and network administration, network security, firewall and biometric system management, surveillance systems, secured domain implementation, IP telephony, video conferencing management, IT infrastructure, cyber security, knowledge resource management, information management, digitization, and digital archival systems. She has also guided numerous B.E., B.Tech., M.E., and M.Tech. students. She has played a pivotal role in developing major IT facilities and infrastructure at CSIR–NAL. As the Nodal Officer for CSIR Enterprise Transformation, she coordinated with CSIR, the National Informatics Centre, Power Grid Corporation, BSNL, and RailTel to establish three high-speed NKN connections across NAL campuses. She supported large-scale ICT upgrades, implemented centralized domain infrastructure for over 1,000 client systems, designed secured network environments for mission-critical projects, initiated the establishment of a secured data centre, and enabled dedicated inter-campus connectivity.

Her contributions extend to institutional governance as well. She served as NKN Nodal Officer and is a member of several key committees, including Cyber Security, Technical Selection, Library Advisory, IT Procurement Advisory, Compassionate Appointments, ISO Internal Audit, and Investment Committees. She also served as Secretary of the NAL Crèche Committee.

Ms. Hemalatha has received multiple honours, including the Excellence Award in ICT Infrastructure Support Services (2016–17 and 2020–21) and a Certificate of Appreciation for exemplary IT service during the COVID-19 pandemic and nationwide lockdown.



Dr. Kamali C

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Dr. Kamali has made extensive contributions to simulation and modeling activities for multiple aircraft programs, including LCA, SARAS, AMCA, Mirage, Jaguar, Learjet, and NAL MAVs such as Black Kite and Sly Bird. Her work encompasses the development of 6-DoF flight dynamic models, and the establishment of a Model-Based Design framework for flight dynamics and subsystem simulations.

A significant achievement in her career was the development of an attitude estimation algorithm for India's Light Combat Aircraft (LCA) without the use of a forward acceleration sensor. This algorithm was successfully implemented onboard the LCA, playing a critical role in achieving Final Operational Clearance (FOC) certification for ALSR and gravity compensation control laws. Building on this success, Dr. Kamali led several technology development projects sanctioned by ADA, including air data calibration, development of FADS algorithms, and inertially aided airdata estimation. The air data tables derived from these algorithms are currently utilized onboard the LCA.

She was instrumental in developing a compact variable stability simulator for the Indian Air Force Test Pilot School, generating significant foreign exchange savings. She has also contributed to the development of a limited avionics dynamics mission simulator for LCA, used by the ADA avionics group, and low-cost desktop simulators for academic research, which have been commercialized and delivered to institutes such as IISc Bangalore and IIT Mumbai. Additionally, she set up a Hardware-in-the-Loop simulation facility for MAVs using a Model-Based Design framework and played a key role in establishing real-time model-based simulation frameworks for the SARAS Mk II System Integration Facility and Iron Bird.

Dr. Kamali has served as a committee member for RCI, ADE, and DRDO, reviewing Nirbhay and Abhyas INS systems, and as a review board member for the Multi-Sensor Guidance System developed by ADE, DRDO. She has also represented CSIR-NAL internationally, receiving travel grants from DST and CSIR to attend the AIAA conference in Boston, USA, in 2013.

She is a Professor at AcSIR, teaching Flight Mechanics, and has authored 37 publications. Her awards and recognition include the CSIR Raman Research Fellowship (2017), CSIR-NAL Best Woman Scientist Award (2009), CSIR-NAL Technology Shields for Group Achievements (2017, 2019, 2022), and the CSIR-NAL Team Excellence Award (2017). In 2023, she was profiled in the Aeronautical Society of India Compendium on Women Achievers in Aerospace and Aviation.



Dr. Lathasree P

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Dr. Lathasree has over 32 years of experience in Research & Development as scientist in various grades in Flight Mechanics & Control Division of CSIR-NAL, Bangalore. She has an expertise in the areas of modeling, simulation and control of aerospace systems and Air Traffic Management Simulation. Her research has resulted in 16 conference and journal papers.

Dr. Lathasree has made significant contributions in the areas of modeling and simulation and setting up simulator facilities with high fidelity visuals for national fighter aircraft programs (LCA, AMCA, Mirage 2000, Jaguar) and transport aircraft programs SARAS Mk I & Mk II, HANSA NG, RTA. She has played a key role in the development of high-fidelity visuals of Shore Based Test Facility at Goa and Indigenous Aircraft Carrier and integration to LCA simulator enabling Ramp Take-Off and Arrested Landing practice for LCA naval variants. She is the project coordinator for Jaguar flight dynamic and sub-system models development and integration to the Fixed Based Full Mission Simulators developed by MCSRDC and commissioned at Jamnagar and Gorakhpur airforce bases.

Dr. Lathasree developed computationally efficient framework for the synthesis of flight controller for fixed wing fighter aircraft for the assessment of aircraft dynamics via simulation enabling an early comparison between different candidate aircraft configurations to narrow down to the final choice of the design configuration. She led a team for the Stability & Control Clearance & Certification of external stores, integrated to Mirage 2000 aircraft, as part of the indigenous Aero-Mechanical Clearance carried out by CSIR-NAL.

Dr. Lathasree developed Navigation and SRTM Interface Software as Guest Scientist at Institute of Flight Guidance, DLR, Braunschweig, Germany. She has made notable contributions in the area of Air Traffic Management Simulation and Analysis of Airspace & Air Traffic for major Indian airports. She has carried out studies on optimal aviation fuel consumption, air traffic controller workload and noise prediction for HAL Bangalore airport.

Dr. Lathasree was a member of the team which was awarded CSIR Technology Shield for the years 2003 and 2019 for contributions to Integrated Flight Mechanics and Control Technology for Aerospace Vehicles and for Carriage, Handling and Store Release Studies for a Fighter Aircraft Upgrade respectively. She was one of the selected Women Achievers felicitated by Department of Defence Production, Ministry of Defence for contributions to the Aerospace Sector, as part of Women's Day Celebrations held on 23.2.2019 during Aero India 2019.



Dr. Manju Nanda

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Dr. Manju Nanda has played a key role in establishing the certification framework for indigenous Software Development Life Cycle (SDLC) processes to certify highly complex and intellectual property-protected applications for manned and unmanned aircraft programs. Her work aligns with both international and national certification standards, including RTCA DO-178B, DO-178C, and the supporting standards RTCA DO-330, DO-331, DO-332, and DO-333. She has established model-based methodologies and workflows to achieve high assurance embedded systems for current civil aircraft programs at CSIR-NAL, leveraging UML 2.0 and SysML. In addition, she has developed a model-based safety framework for embedded system workflows aimed at supporting certification activities.

Her research focuses on developing methodologies, workflows, knowledge bases, and best practices for embedded software development in safety-critical applications, with the objective of achieving high-assurance certified systems. She is currently working in advanced areas such as AI/ML, advanced real-time operating systems (RTOS), advanced display systems, programming languages, and multi-core architectures, contributing towards the evolution of more digital and intelligent systems.



Dr. Meenu Srivastava

Ph.D. (Metallurgical & Materials Engineering)
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Dr. Meenu Srivastava has over 20 years of experience in Research and Development as a scientist in various grades in the Surface Engineering Division of CSIR-NAL, Bangalore. Her expertise is in the surface modification of diverse substrates, nanocomposites, electrodeposited coatings for wear resistance and corrosion resistant applications and thermally sprayed coatings for high temperature applications. She has developed technologies like erosion protection strips as import substitute for the rotor blades of the ALH helicopter, wear-resistant coating for the Unmanned aerial vehicle which has been certified and successfully flight tested and composite coating for the automobile engine cylinder. She developed an eco-friendly replacement coating for the toxic cadmium for use in aircraft components which has been certified by RCMA (F&F), CEMILAC and the quality coverage was provided by DGAQA, ARDC, HAL. A production level pilot plant has been established by her for the plating on LCA aircraft components. She was also involved in the development of eco-friendly anodization process for the corrosion protection of aircraft Al alloys and this process has been certified by RCMA (F&F), CEMILAC for usage in airborne stores. The eco-friendly corrosion protective coatings developed are under implementation in the aircraft programs of DRDO and in-house.

Her interest in material science resulted in the high temperature nano-composite coatings for industrial gas turbine applications through simple, non-vacuum method, protective coating using ionic liquids, and super-hydrophobic coatings. Dr Meenu has been instrumental in establishing thermal spray coating facilities like High Velocity Oxy Fuel (HVOF) and low pressure cold spray systems. These facilities facilitated research on repair and refurbishment of aircraft components for life extension by cold spray process, coatings for power plant applications, development of novel MAX-phase coatings for automotive applications and high entropy alloy coatings as probable bond coat for thermal barrier coating applications. Her research has resulted in nearly 40 publications in peer reviewed international journals, grant of 2 Indian patents and transfer of technology on wear resistant coating for foil bearing applications. Dr. Meenu was a recipient of the prestigious N M Sampat Award from the Electrochemical Society of India. Her work on the wear resistant composite coating for automotive applications was recognised by ARAI. She was recognised as the Best Woman Scientist, Best Technology Award and Outstanding Team Performance Award by the parent organization.



Dr. Rajani B N

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Dr. Rajani has played a major role in the development of the in-house CFD code 3D-PURLES to solve turbulent and transition low speed flows using different eddy viscosity based models and Large Eddy Simulation (LES). She is one of the few scientists in our lab to have used the high fidelity LES tool to predict flow features more accurately. This 3D-PURLES code has been extensively used in various projects sponsored by DRDO (NSTL, ADRDE, CABS, ADE), CSIR-NAL-CAE, ISRO(ISTRAC), Naval Research Board and also for in-house Radome and aircraft projects. She was also Instrumental in fetching three major projects related to CFD simulations of Micro Air Vehicles(MAV) from DRDO (ADE and NPMICAV) based on her expertise in the area of turbulent low speed flows. The 3D-PURLES code was upgraded with capability to model flow transition which was required for MAV simulations operating at very low Reynolds number. This code was more recently used to predict the flow transition for the NAL Regional Transport Aircraft (RTA) wing and demonstrated the necessity of modelling transition for accurate prediction of the aerodynamic coefficients. She also has vast experience in using the opensource CFD codes like OpenFOAM and SU2 for simulating internal and external flow for the CSIR-NAL RTA and SARAS programs. Her Ph.D. research paper in Applied Mathematical Modelling Journal has more than 500 citations and even today it is read and cited by many researchers worldwide. She has delivered invited talks under the training program in CFD and aerodynamics to scientists and engineers of NPOL, Kochi, NSTL, Visakhapatnam and HAL Management Academy, Bengaluru.

Her broad area of research include Computational Fluid Dynamics (CFD), Turbulence and transition modelling and Large Eddy Simulation. She has published 8 Journal papers, 55 conference papers and more than 100 documents. She has received the Dr. M.G. Deshpande memorial award for the best paper from academic institutes and national research laboratories at the 23rd National Conference on Fluid Mechanics and Fluid Power in 1996. She is also the recipient of NAL Outstanding Performance award in July 2002 as a team member for Design Development and installation of 12.88m dia. curved sandwich Radome for the Döpler Weather Radar.



Rashmi Vijaykumar Hundekari

Masters (Aerospace Engineering)
Chief Scientist
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Smt. Rashmi Hundekari holds a Master's degree in Aerospace Engineering from the Indian Institute of Science (IISc), Bangalore. Since 2006, she has been associated with CSIR–National Aerospace Laboratories (NAL), Bangalore, and is presently serving as Chief Scientist at the Roddam Narasimha Civil Aircraft Centre (RNCAC). She serves as the Project Director, leading the indigenous design, development, and certification of the 19-seat Light Transport Aircraft SARAS Mk II, a flagship program in India's civil aviation sector.

With over 18 years of research and development experience, she has contributed across diverse aircraft domains, including: Airframe design and stress analysis, Weight-CG, Structural load computation, Aircraft structural safety against foreign object impacts, Cockpit and cabin layouts, Cabin and cockpit ergonomics

Her core competencies lie in: Airframe structural design and stress analysis using both conventional and finite element methods. Safety assessment of aircraft structures under uncontained engine rotor and propeller blade failure, foreign object impact scenarios. Structural damage and fatigue life evaluation using numerical methods.



Dr. Shylaja Srihari

Ph.D. (Mechanical Engineering)
Chief Scientist
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Dr. Shylaja is a distinguished aerospace scientist with significant contributions to the qualification, certification, and structural integrity evaluation of composite materials for Indian aerospace programs. She played a pivotal role in the certification of India's first indigenous all-composite two-seater trainer aircraft, HANSA, developed by CSIR–NAL, at a time when no comparable reference data was available globally. She has also contributed extensively to HANSA-NG, the indigenous development of the JAGUAR aircraft nose-cone radome, TDF radomes for TU-142M aircraft, SATCOM components, Doppler weather radomes, and advanced research in Shape Memory Polymers (SMPs). She was instrumental in establishing the Environmental Test Facility (ETF) at CSIR-NAL, significantly enhancing national capabilities in environmental qualification testing of aerospace structures.

Dr. Shylaja has received several prestigious honors, including the BEST Woman Scientist Award (2003); CSIR-NAL Outstanding Performance Award for Excellence in Research (Team) for the development of shape memory polymers for aircraft structural applications (2014); and the CSIR-NAL Excellence Award in Technology for research on lightweight polymer nanocomposite-based avionics LRU enclosures during the CSIR Platinum Jubilee celebrations (2016). She was recognized by the Telangana Composites Manufacturing Association (TECMA) as an outstanding stalwart of Indian composites during the Diamond Jubilee of the Indian Composite Industry (1962–2022) and received the Karnataka Women Inspiring Award 2025 from the Press Club of Bangalore on International Women's Day.

Her professional profile has been featured in Asia/Pacific Who's Who (2017), Famous India: Nation's Who's Who (2018), and Asia/American Who's Who (2019). Her areas of expertise include environmental testing, structural integrity testing, and qualification and certification of composite structures for aerospace applications. She holds a patent on SMP composites and was involved in the transfer of technology of the JAGUAR radome to HAL.

Currently, Dr. Shylaja is engaged in the indigenization and development of radomes for LCA, AMCA, and UHM helicopter platforms, along with structural integrity testing for SARAS, HANSA, LCA, AMCA, and other laboratory programs. She is an Associate Professor at AcSIR, New Delhi, has guided UG, PG, and PhD scholars, serves on the Executive Board of ISAMPE, and is a founder member of the Indian Society for Structural Integrity (InSIS). She has authored numerous publications in reputed international journals and conferences.



Shobhavathy M T

M.Tech. (Heat Power Engineering)
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Ms. Shobhavathy began her professional career in 1994 as a Scientist at CSIR-NAL, after obtaining a B.E. in Mechanical Engineering from UVCE, Bengaluru, and later enhanced her expertise in turbomachinery and thermal systems with an M.Tech. in Heat Power Engineering from NITK Surathkal. Over the past three decades, she has contributed extensively to aero-engine technologies, specializing in high-speed axial flow compressors and fans. Her primary research focuses on aerodynamic performance enhancement, stall control techniques, and advanced casing treatments. Her key contributions include boundary layer control using vortex generators and active control of rotating stall; development of grooved and slotted casing treatments, including a self-circulating casing treatment published in the ASME Journal of Turbomachinery; Rotor–stator interaction studies, development of high-pressure ratio fan stages with composite blades, and performance evaluation of STFE and Manik engine fan stages.

Ms. Shobhavathy has played a pivotal role in the augmentation and maintenance of the high-speed rotating Axial Flow Compressor rig. She has refurbished the national-level research rig building and developed a dedicated data acquisition and control software, ensuring smooth and reliable operation of the facility. This upgraded facility has since served as a valuable national resource, enabling advanced turbomachinery research and contributing to three researchers successfully earning their PhDs. She has conducted CFD-based optimization studies on vane-type vortex generators, sweep and lean effects, and rotor tip clearance using ANSYS FLUENT. She has also contributed to the aerodynamic design of axial/mixed flow compressors for 1 kN small gas turbine engines and maintained high-speed compressor test rigs since 2008.

Ms. Shobhavathy has been an organizing committee member/convener for major conferences, including ASME GT INDIA and the National Conference on Aerospace and Defense Technologies. She has mentored several M.Tech. and B.Tech. students in turbomachinery and aerospace R&D. As Quality Manager (CAR-M, Sub Part F & G), she liaises with DGCA, conducts regulatory audits, oversees vendor approvals, and ensures compliance for aircraft maintenance and continuing airworthiness.

She is a recipient of the CSIR-NAL Excellence Award in Research (2022) and has published around 35 papers in journals and conferences and also served as a reviewer for reputed journals and conference.



Dr. Soma Dutta

Ph.D. (Smart & Functional Materials)
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Dr. Soma Dutta started her career at CSIR-NAL in 2004 with the expertise in the field of Smart and Functional Materials from her doctoral degree at Indian Institute of Technology (IIT) Kharagpur. Initially, she was involved in the CSIR-10th plan project for developing thermoelectric materials of high figure of merit for Peltier cooler application. She translated the applied research in this field and had taken up a project during 2017-21 under the umbrella of Clean and Renewable energy program of Department of Science and Technology for developing a Solar Powered Thermoelectric Generator module, upgradable to Roof Top Model. This project got wide publicity during Indian Science Congress in the year 2020. With her initiative, research activity on Piezoelectric thin/thick films and coatings for Smart devices and Structures for aerospace/strategic application was taken place at Materials Science Division of CSIR-NAL in the year 2007-08. Facilities for such material processing, characterization and device testing was developed by her with funding resources from National Program for Micro and Smart System (NPMSS) and CSIR-11th Plan project. A significant R&D contribution was made by her in two consecutive National programs, led by DRDO labs, ADA (NPMSS) and ADE (NPMICAV).

In her research career at CSIR-NAL, till date, Dr. Dutta has taken up thirteen projects as Principal Investigator, worth Rs. 9 Cr, out of which, eleven have been successfully completed and two are ongoing. Under these projects, several technologies have been developed, to name a few those have national interests are Piezoelectric paint, Piezoelectric MEMS Sensor Chip ($\Phi=4$ inch) are the first of their kind products in India. There are smart sensors and actuators like Piezo Accelerometer, MEMS Pressure Sensor, SAW Sensor and Micro Ultrasonic Transducers are indigenously developed starting from design and composition of materials, application specific processes, and final device product/system. She has been instrumental in bringing collaborative projects with DRDO labs, academia and Industries. As an AcSIR faculty, she has designed a 3 credit course curriculum as a lead faculty for Integrated M.Tech/Ph.D. program. Her research contributions in the field has been evidenced in the form of Publications (82), patent (01) and Book chapter (01). She has guided 5 PhD thesis and seven M.Tech/M.Sc thesis and trained many students from UG, PG including project staffs. She is recipient of prestigious CSIR-Raman Research Fellowship of 2016-17, Indian Society for Advancement of Materials and Process Engineering (ISAMPE) Award 2013 and Outstanding Research Performance Award-NAL 2013.



Dr. Sujata M

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Dr. M. Sujata holds a Ph.D. in Materials and Metallurgical Engineering and is presently serving as Cluster Chairperson (Materials Science and Technology) in the Materials Science Division at CSIR-NAL, Bengaluru. She has been associated with CSIR-NAL since 2002 and brings over two decades of extensive experience in materials engineering, with particular specialization in failure analysis and aircraft incident and accident investigation.

During her 23-year tenure at CSIR-NAL, Dr. Sujata has investigated more than 1,050 in-service failures involving aircraft engines, structures, and systems. Her work has played a critical role in identifying root causes of aircraft incidents and accidents, providing vital technical support to major national stakeholders including Hindustan Aeronautics Limited (HAL), Indian Air Force, Indian Navy, Army Aviation, Indian Coast Guard, Aeronautical Development Agency (ADA), Aeronautical Development Establishment (ADE), Gas Turbine Research Establishment (GTRE), and the Directorate General of Civil Aviation (DGCA). Her contributions have significantly enhanced safety, reliability, and operational readiness in India's aerospace and defence sectors.

Dr. Sujata has also contributed to materials selection, qualification, and certification activities for CSIR-NAL's indigenous aircraft programmes such as SARAS, HANSA, and the Wankel Engine project. She has actively disseminated knowledge gained from field investigations through invited lectures, workshops, and seminars tailored for aircraft manufacturers, operators, and certification agencies. Her research outcomes are documented through several publications in reputed national and international journals.

Prior to joining CSIR-NAL, Dr. Sujata served as Deputy Manager at the Foundry and Forge Division of Hindustan Aeronautics Limited, Bengaluru (1999–2002), where she contributed to the indigenization of materials for multiple aircraft programmes. An active academic contributor, Dr. Sujata has been a faculty member of AcSIR for over 15 years, teaching the doctoral course on "Aeronautical Materials". She has served as an expert member for doctoral committees at CSIR-NAL and has co-guided two Ph.D. scholars from IIT Kanpur and NIT Calicut.

Her professional excellence has been recognized through several honours, including the Young Metallurgist Award (2001) and recognition at Aero India 2019 for outstanding contributions to the aerospace sector. She also served as an Expert Member of the AR&DB (DRDO) Materials and Manufacturing Panel from 2019 to 2022.



Dr. Vanaja A

Ph.D. (Chemistry)
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Dr. A.Vanaja is a Chief Scientist in Advanced Composites Division at CSIR –NAL, Bengaluru. With a Ph.D. in Chemistry, she brings over three decades of expertise in the field of High performance Polymer Composites, Nanocomposites and Conductive composites for Aerospace and Defence applications.

Her comprehensive research contributions include the development and processing of high performance polymers like epoxies, polyimides, bismaleimides (BMI), cyanate esters and polyurethane based rain erosion coatings for fighter aircraft and radome structures. She has also extensively worked on conductive polymers and nano composites with a specific focus on EMI shielding for avionics, stealth technologies, super capacitors and strain sensing for MAVs. Aligned with the Government of India's Make in India mission, Currently she is involved in Indigenization of Polymer composite materials for HANSA–NG aircraft. Dr.Vanaja led the development of high-temperature BMI matrices and CFRP composites as import substitutes for LCA-Tejas engine bay doors, resulting in 43% foreign exchange savings. She also spearheaded the development of lightweight conductive polymer composite enclosures for LRUs which have successfully completed the Safety Of Flight Tests (SOFT) and cleared for ground integration on to LCA-Tejas.

Dr. Vanaja has contributed to key National Programs including Doppler weather Radomes for ISTRAC BEL, HANSA aircraft. Her product specific research during these programs enabled the certifications from DGCA and CEMILAC and facilitated technology transfers to HAL and BEL. She has mentored many B.E., M.Tech., and Ph.D. students, with ongoing doctoral supervision under AcSIR and NIT Raipur. Her scholarly contributions include 15 international Journal publications, 25 Conference papers, and a granted patent on a novel thermosetting polymer (Patent No. 218304). She is a peer reviewer for many international journals related to polymers, composites and materials technologies

Dr. Vanaja's work has been recognized through several awards. Few of them are CSIR-NAL Best Woman Scientist Award (2004–05), Excellence Award in Technology Development (2015–16), Outstanding Reviewer Certificate – Chemical Engineering Journal, Elsevier (2017), and CSIR-NAL Technology Shield for Group Achievement (2021–22) – HANSA-NG aircraft development. Dr. Vanaja continues to drive innovation and indigenization of aerospace materials and processing technologies and contributing to nation's self-reliant technologies.



Veena S

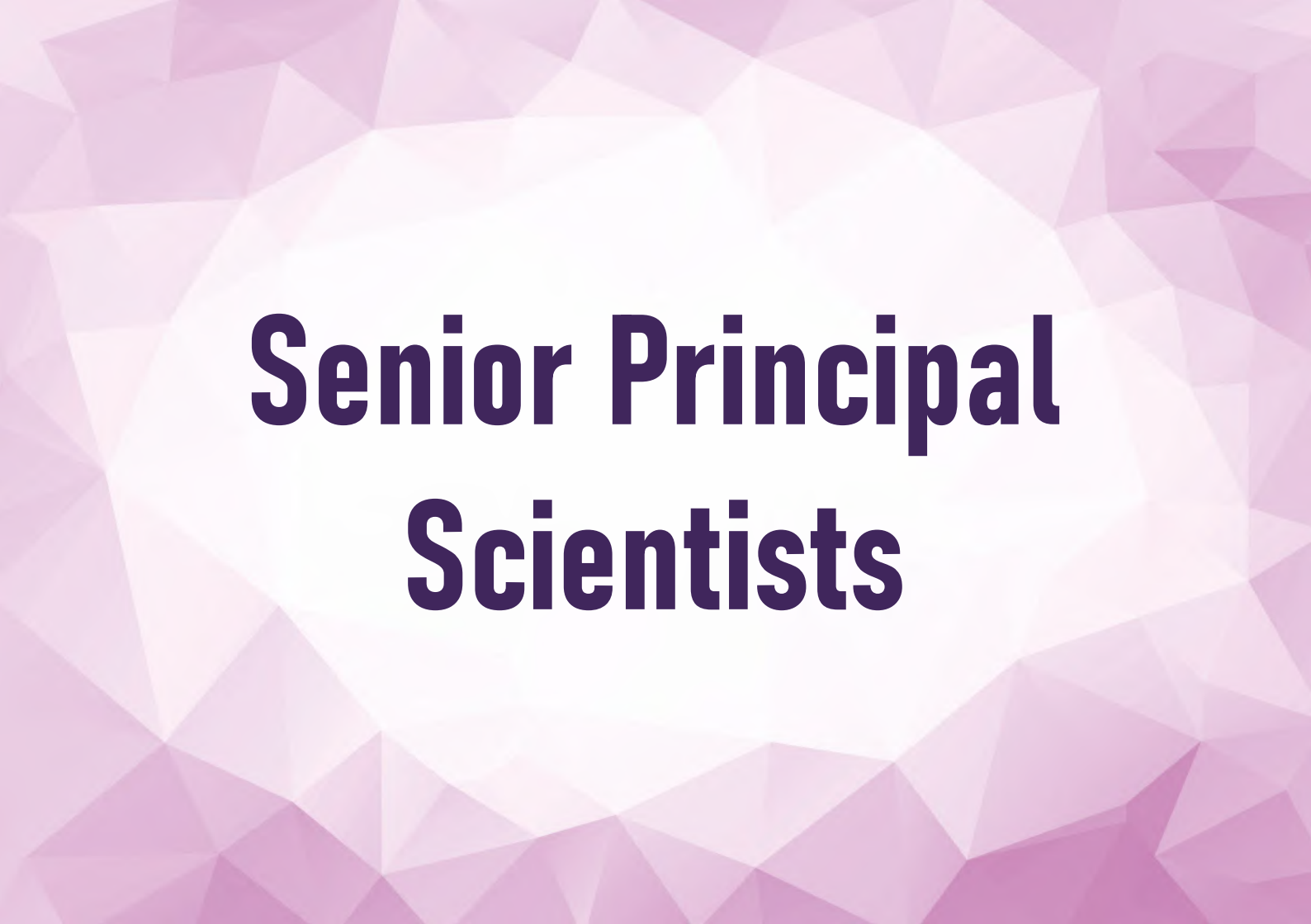
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Ms. Veena has made significant and sustained contributions to CSIR–NAL, with her major work centered on nurturing and advancing the field of Active Noise Control (ANC). In the early stages of her career, she played a key role in establishing the ANC Laboratory at CSIR–NAL in 2004, with specific responsibility for setting up real-time system development platforms. She was also instrumental in developing ANC algorithms on embedded DSP platforms for real-time system realization. In recognition of her early achievements, she was awarded the Best Woman Scientist Award in 2004. Over nearly two decades of dedicated effort, her work has helped mature ANC at CSIR–NAL from a pure research activity to the product development stage. Notable outcomes include the development of an ANC prototype for fighter pilot helmet demonstration during engine ground trials of the LCA PV/LSP aircraft, development of an ANC system for civil aircraft passenger seats with successful demonstration on Dornier 228 aircraft, and execution of a consultancy project for UIET, Panjab, aimed at reducing ambulance noise using ANC techniques.

Her comprehensive research accomplishments are primarily in the domain of Active Noise Control, with the development of algorithms for mitigating fighter aircraft broadband noise, turboprop aircraft noise, ambulance noise, and incubator noise. In addition to ANC, she has contributed to the laboratory's Micro Aerial Vehicle (MAV) activities through the development and demonstration of a voice-controlled MAV concept.

Her academic and technical contributions are substantial and quantifiable, including authorship of three books, over 30 publications in peer-reviewed journals and conferences, guidance of M.Tech students, training of academicians, and successful execution of consultancy projects. At present, Ms. Veena is actively involved in the design, development, qualification, and certification of the Integrated Avionics Flight Control Computer (IAFCC) hardware, a major indigenization initiative for the SARAS Mk II aircraft. This activity is aimed at building in-house expertise in civil aircraft system design and achieving significant non-recurring engineering (NRE) cost savings. Her responsibilities encompass coordination and management of the entire project life cycle, from requirements capture and system design through qualification and flight testing.



Senior Principal Scientists



Dr. Abanti Nag

Ph.D. (Material Science)
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Dr. Abanti Nag, Ph.D., is a Senior Principal Scientist in the Materials Science Division (MSD) at CSIR-NAL, Bengaluru. She joined CSIR-NAL in 2010 and has since been actively engaged in research and development of advanced functional ceramics and composite materials for aerospace and defence applications.

Dr. Nag's research spans the design, synthesis, processing, and characterization of oxide and non-oxide ceramic materials, with strong emphasis on translating materials research into prototype-level technologies. One of her major areas of contribution is oxide-based thermoelectric materials and thermoelectric module design aimed at waste heat energy harvesting. She has also made significant contributions to the development of thin-film ceramic thermocouples tailored for high-temperature surface temperature mapping of gas turbine blades, enabling advanced thermal diagnostics for propulsion systems.

Another key focus of her work includes ferrite-based radar absorbing materials (RAM) and hybrid composite structures developed for stealth applications. Her research further extends to non-oxide ceramics engineered for high-temperature electromagnetic (EM) window applications, where materials must simultaneously meet stringent thermal, mechanical, and electromagnetic performance requirements.

She has contributed to the scientific community through peer-reviewed publications her research continues to support the strategic goals of CSIR-NAL in advanced materials development for next-generation aerospace systems.



Akshatha H T

M.Tech. (Computer Aided Design of Structures)
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Ms. Akshatha H T has been working in the area of Structural design and Analysis and has contributed immensely to CSIR-NAL's indigenous Civil Aircraft design and development programs - 14 seater and 19 seater Light Transport aircraft-SARAS, 2 seater trainer aircraft-HANSA. She has extensively worked on design and analysis of major airframe components, supported fabrication activities and realization of components on the aircraft, coordinated with certification agencies to get the design approvals for their implementation on the aircraft, clearing production and assembly snags, structural testing and flight testing activities, test data correlation, etc - thus contributing to complete life cycle of the aircraft design and development process. She is the main design signatory for the present flying prototype of Saras. Currently she is also leading a team working on in-house design and engineering of new Engine mount and Nacelle structure for a wing mounted twin engine transport aircraft, Saras 19 seat prototype, which is being indigenously developed for the first time in India.

Her tireless efforts were towards carrying out hundred plus structural modifications as mitigation plan to bring back Saras prototype aircraft program to test flight mode. Some of her noteworthy contribution are in design solution of special problems like indigenous design-development of efficient ECS Engine Bleed system for Saras aircraft which was recognized at international level competition and was awarded silver medal, crucial design compliance and testing of fire proof coating for implementation on the aircraft, fail safe engine support structure design, weight optimisation for production standard prototype and so on. She is also recipient of many in-house performance achievement awards ranging from outstanding team performance to commendation awards recognizing her contribution to aircraft design and development programs. She has also featured in "Women in Aerospace and Aviation": Compendium of women achievers by Aeronautical Society of India.

She has served as research domain Expert member of Board of Studies (BOS) of Visveswaraiah Technological University, Karnataka state for its M Tech program in CADs responsible for finalizing the syllabus for the academic sessions. She has guided several Masters and Bachelor degree academic projects taking real time aircraft level design problems. Her work has been showcased in many conferences and technical lectures which have been well received. She has also written many scientific articles in regional language, Kannada, for promoting and nurturing scientific and aerospace knowledge in young minds.



Amardeepa K C S

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Ms. Amardeepa is a Senior Principal Scientist in the Advanced Composites Division (ACD). She holds a Master of Engineering degree in Mechanical Engineering with a specialization in Manufacturing Science and Engineering. With a strong academic background and deep technical expertise, Ms. Amardeepa has made significant contributions in the area of Design and Analysis of Metal and Composite Aircraft Structures. Her research has played a key role in supporting various national aerospace programs and has resulted in several national conference papers, journal publications, and technical documents.

Her broad research focus includes Finite Element Analysis (FEA) and structural design of critical composite components in various aircraft programs. She has contributed to R&D work involving composite parts such as T-joint studies, CAE test boxes, and FE analysis for major aircraft structures. Her notable project contributions include LCA Fin and Rudder, HANSA wing, SARAS Mk-I wing and control surfaces, AMCA flaperon and aileron control surfaces, SARAS Mk-II wing FE analysis, and HAPS (High-Altitude Pseudo Satellite) propeller blade full-scale model design and analysis. Ms. Amardeepa is currently continuing her efforts on structural design and analysis activities related to SARAS Mk-II and HAPS, offering valuable R&D support to these critical projects.

She has authored three technical publications and continues to contribute through her analytical skills, design proficiency, and commitment to applied research. Her work not only supports national aerospace development but also advances knowledge in the field of composite structures. In recognition of her professional engagement, she is a life member of the Indian Society for Advancement of Materials and Processing Engineering (ISAMPE). Through her dedication to aerospace research and engineering excellence, Ms. Amardeepa K.C.S has established herself as a valuable contributor to CSIR-NAL's mission and to the broader field of aerospace structural design and analysis.



Dr. Anju Sharma

Ph.D. (Engineering Sciences)
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Dr. Anju has extensive experience in developing highly specialized instrumentation and data acquisition systems for wind tunnel applications. She has developed and implemented advanced wind tunnel instrumentation and data acquisition systems for more than 15 national aerospace projects. These systems have enabled accurate aerodynamic measurements for critical missions in the strategic sector, significantly enhancing India's self-reliance and reducing dependence on foreign test facilities.

Her present work focuses on the development of multi-sensor data fusion algorithms for target detection, tracking, and classification using AI and machine learning (ML). This includes the design of real-time neural networks for trajectory prediction. A core aspect of her research is multi-sensor data fusion (MSDF), which integrates inputs from diverse sensors to enhance state estimation such as position, velocity, and attitude and improve situational awareness in complex defense scenarios. She also works on AI/ML-based target classification techniques.

Her expertise extends to condition monitoring and fault diagnosis in mechanical systems, including Remaining Useful Life (RUL) prediction and predictive maintenance through fault detection, diagnosis, and classification using AI/ML approaches. Her research interests further include real-time target tracking and missile or airborne vehicle trajectory estimation.

She has been awarded with CSIR-NAL Outstanding Performance Award (2022–23): Special Mention under “Outstanding Team Performance” for exemplary contributions to the Augmentation of NTAF Wind Tunnel Facilities, Received the third prize for presenting a paper/research article in Hindi on at the two-day Joint Rajbhasha Technical Seminar organized by the ECS Cluster of DRDO at LRDE, Best Paper award for paper presented at the International Conference on Sustainable Industry 4.0 (ICSI 2025). Dr. Sharma has authored/co-authored 1 book chapter, 1 software copyright, 7 scientific research papers, 22 conference papers, 25 technical reports. She has also supervised interns and postgraduate dissertations. She has reviewed several papers in National and International Journals.



Dr. Archana Hebbar P

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Dr. Archana Hebbar has over 17 years of experience of research and development at CSIR-NAL, Bengaluru. Her contributions at Flight Mechanics and Control Division, CSIR-NAL includes upgradation of Engineer-in-the-loop simulator for LCA control law evaluations for IOC clearances and development of system models for AMCA basic flight simulator. Subsequently, she has developed the instrumentation system for SARAS commuter aircraft's flight training device. She has also contributed for development of a desktop flight simulator (NALSim) that is used by students to conduct studies on aircraft configuration design, flight mechanics, guidance & control and autonomous navigation algorithms. Twenty licenses of this simulator is delivered to Indian Institute of Science. NALSim ground simulator commissioned at Airforce Test pilot school, Bengaluru is also being used by trainee pilots to understand aircraft dynamics.

Presently, she is working in Systems Engineering Division wherein she has contributed towards aircraft level requirement capture and identification of design workflows for different aircraft systems for CSIR-NAL's SARAS Mk-II. She has set-up a virtual reality based digital mockup facility that was immensely used by designers and maintenance personnel to evaluate accessibility and reachability aspects of aircraft cockpit and other LRU placements.

Her other areas of specialization and expertise include aircraft system modelling and simulation, graphical user interface development, human machine interaction evaluations and development of virtual reality-based platforms. She was instrumental in the development of flight simulators for different applications such as reconfigurable design flight simulator for aircraft configuration studies and low-cost desktop simulators for academic research purposes. Some of these simulators are commercialized and are delivered to academic institutes such as Indian Institute of Science and Airforce Test pilot school, IAF. Her other main contributions include development of taxonomy for human factors in aircraft design and development of novel methodologies for estimating pilot's cognitive workload based on their physiological measures such as EEG, ocular parameters and pilot's flying performance.

Dr. Archana has authored more than 15 research papers in peer reviewed journals and conferences and is a reviewer of many national and international journals. She is recipient of CSIR-NAL technology shields in 2012 and 2017.



Dr. Balamati Choudhury

Ph.D. (Antenna array & Soft computing)
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Dr. Balamati Choudhury is currently working as Senior Principal Scientist at Centre for Electromagnetics of CSIR-NAL, Bangalore, India. She has over 20 years of research development and teaching experience as a scientist in various grades of CSIR-NAL and Senior faculty at NIST, Odisha. Her active areas of research interests are in the domain of: Stealth technologies, Computational Electromagnetics for Aerospace Applications, Soft Computing Techniques in Electromagnetic Design and Optimization, Metamaterial Design Applications, RF and Microwaves. More specifically, the topics of the sponsored projects she has contributed to are, development of low RCS design of combat aircraft for DRDO, Ray Tracing Techniques towards RF Analysis of Propagation in an Indoor Environment for Boeing, Seattle, development of stealth material design for various aircrafts and UAV, Conformal Antennas.

Dr. Balamati has been instrumental in creating EM characterization measurement facility using spot focusing measurement system, NRL-ARC RCS measurement platform, and THz measurement facility. These facilities has been extensively used for stealth material development and characterization in collaboration with various research labs of India. This facility has also been used for indigenous development of metamaterial radar absorbing structures and applications thereof. The antenna measurement facility developed by her is also used for indigenous development of antennas for HANSA and SARAS aircraft.

Dr. Balamati has authored or co-authored over 290 scientific research papers and technical reports, besides 8 software copyrights/patents, four books, five Springer Briefs and three book chapters and also Chief Editor of a Metamaterial Handbook Series by SpringerNature, Singapore. The book entitled: Soft Computing in Electromagnetics: Methods and Applications have been published by the Cambridge University Press, Cambridge, UK (2015) has been well appreciated and is reflected in Wikipedia. Another Book "Metamaterial Inspired Electromagnetic Applications: Role of Intelligent Systems" has been published by Springer, Singapore. She is also one of the Editor of Handbook of Nano metamaterials Volume. The five Springer Briefs published by her in Springer, Germany covers all the cutting-edge technologies such as Terahertz technology, invisibility cloaking and HF ray based methods for space applications.



Dr. Bhuvana N

Ph.D. (Engineering)
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Dr. N Bhuvana has been working at CSIR–NAL since 2004. In the initial phase of her career, she contributed to the establishment of PLC- and SCADA-based control systems for the Chemical Vapour Infiltration (CVI) reactor. She also played an active role in failure analysis and accident investigation activities at CSIR–NAL.

She earned her PhD (Engineering) in Nanoscience and Engineering from the Indian Institute of Science (IISc), Bengaluru. Her doctoral research, titled “Development and Performance Evaluation of the Flapping Wing with In-situ Piezoceramic Actuator,” focused on the design, development, and performance assessment of flapping wing systems using embedded piezoceramic actuation.

Currently, Dr. Bhuvana is involved in the design and development of avionics systems for the SARAS Mk II aircraft. Her work includes the development of the Central Maintenance Computer (CMC) as well as ground maintenance and support systems, contributing to enhanced aircraft maintainability, diagnostics, and operational efficiency.

Her areas of interest include span mechatronics, piezoelectric sensors and actuators, MEMS, flapping wing technologies, avionics systems, Central Maintenance Computers, and ground maintenance and support systems. She has authored five external publications and 44 internal technical publications, reflecting her sustained contributions to research, development, and institutional knowledge at CSIR–NAL.



Deepa Sakravarthini

M.E. (Structural Engineering)
Senior Principal Scientist
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Ms. Deepa Sakravarthini has a Master's degree (2006) in Structural Engineering from Coimbatore Institute of Technology, Coimbatore. She has joined Structural Technologies Division, CSIR-NAL in April 2008. She has worked in R&D projects supported by CSIR, New Delhi and Sponsored projects from Vikram Sarabhai Space Centre (VSSC), Thiruvananthapuram and Naval Aircraft Yard, Naval Base Kochi. These projects cover areas like, structural design and analysis, thermal stress analysis, structural optimization and flutter analysis. She has worked on integration frameworks for structural layout optimization using Process Integration and Design Optimization (PIDO) tool. Also, she has worked in simulation process and data management tools (SPDM). Further, she has contributed to the projects from automobile sector too. she has worked in In-house project design & development of Horizontal Tail of HANSA two seater trainer aircraft. Major of the projects were carried out using available software facilities, i.e., MSC Nastran, MSC Patran, Altair Hyperworks.

Currently, she is working in design development of center fuselage of SARAS MK -II aircraft. She is an Qualified Internal Auditor for AS 9100 Rev.D – Certificate No.: CC/IQA/045-23. Her research interests include Structural Design and Analysis, Structural (Size and Layout) Optimization and Aero-elasticity.



Devshree Kumar

M.Tech. (Advanced Instrumentation Engineering)
Senior Principal Scientist
UAV Design & Integration Division
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Ms. Devshree, Senior Principal Scientist at the UAV Design and Integration Division, CSIR-NAL, has consistently demonstrated excellence in advancing unmanned aerial vehicle (UAV) technologies with national impact. With a strong academic foundation holding a Master's in Advanced Instrumentation Engineering from CSIO and a Bachelor's in Engineering completed with a distinction project at ISRO. She began her journey with a prestigious All-India CSIR Quick Hire Fellowship in 2009.

She pioneered the development of cooperative formation algorithms for multi-UAV systems, successfully demonstrating synchronized flight using NAL's MicroUAVs in both simulations and field trials. Her work led to the establishment of CSIR-NAL's Processor-in-Loop Simulation (PILS) facility and earned her the CSIR-NAL Outstanding Excellence Award. Her contributions were recognized nationally when she was invited as a podium speaker at MATLAB EXPO 2016.

Ms. Devshree later advanced to AI-based computer vision algorithms for UAV surveillance on indigenous UAV SUCHAN. Her target detection and tracking system was published in MATLAB EXPO. Her successful field demonstrations were witnessed by academic experts and government officials, reinforcing the utility of UAVs in real-world surveillance and defense scenarios in RSAC 2017, IISF 2018. She further applied this expertise in geospatial mapping, producing high-accuracy DEMs and NDVI maps for coalmines and agricultural fields. It was showcased to Dr. Harshwardhan (Ex-Minister of Science and Technology). Her collaboration with CSIR-IHBT enabled UAV-based precision agriculture trials, helping predict plant health using NDVI imagery.

During the COVID-19 pandemic, she played a vital role in designing and patenting an AI-enabled non-contact vital sign monitoring device, showcasing her ability to pivot research for societal needs. In recognition of her expertise, she was a jury member at the Drone Olympics during Aero India 2019 and has been a featured speaker at events hosted by AMITY University, MathWorks, and Session Chair for the Machine Learning track at IEEE RASSE 2023. She was honoured with Distinguished Alumni Award 2024 by AMITY University.

Currently, she leads a multi-lab initiative focused on smart agro-technologies, integrating UAV-acquired multispectral, LIDAR, and thermal data for site-specific crop management and pesticide spraying. Devshree is deeply committed to leveraging cutting-edge UAV and AI technologies to develop smart, socially impactful solutions.



Divya S

M.Tech. (Dynamics & Control)
Senior Principal Scientist
National Trisonic Aerodynamic Facilities Division
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Ms. Divya is a key member of Instrumentation & Control (I & C) group at 1.2m Wind Tunnel, NTAF with over 17 years of experience in instrumentation, control and data acquisition for diverse strategic wind tunnel model configurations and specialized test programs. She has contributed to mission-critical aerospace programs such as LCA, GSLV, SFDR, CES (Gaganyaan), FUFU, AMCA, Nirbhay, NGARM, PSLV, SARAS by generating wind tunnel data to optimize control and aerodynamic/structural design for missiles, aircrafts and launch vehicles. Her expertise in instrumentation, control and data acquisition systems enabled the wind tunnel to be self-sufficient in aerodynamic testing, reducing dependency on foreign facilities.

Ms. Divya's major contributions include development of LabVIEW-based High-Speed Data Acquisition System (HSDAS) for Air Intake models – offering improved scalability, maintainability, and modularity; devising a digital logarithmic decrement method and LabVIEW program for dynamic derivative measurements of free oscillation tests – enhancing measurement accuracy to $\pm 2.5\%$ from $\pm 10\%$; commissioning a National Instruments (NI)-based signal conditioning system – portable, robust, and efficient; upgrading calibration modules for pressure measurements with user-friendly GUI and improved user experience; development of the Pitch system module of the Integrated Tunnel Control System for better hardware/software maintainability. She was also involved in the implementation of LabVIEW-based control and DAQ system for testing 1:1 scale DMRJ model; developed 8-channel and 28-channel wireless DAQ systems for unsteady pressure measurements with DIAdem-based visualization – enhanced signal-to-noise ratio and portability; developed calibration/check pressure programs for 128-channel unsteady pressure measurement system and developed the Control and Data Acquisition System for measurement of Roll Damping Derivatives on Slender models. She led the I&C team for refurbishment of Additional Model Cart and Twin Roll Model Support system, and in calibrating the Mass Flow Control Unit for the STAR missile and LCA Mk2 air-intake models at the new Ejector test facility of NTAF.

Ms. Divya was a member of the team which received the Special Mention Award under the category "CSIR-NAL Outstanding Team Performance 2022-23" for the exemplary work in "Augmentation of NTAF Wind Tunnel Facility". She has authored 32 publications comprising institutional reports and conference papers.



Khadeeja Nusrath T K

M.Tech. (System Identification & Multi-sensor Data Fusion)
Senior Principal Scientist
Flight Mechanics & Control Division
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Ms. Khadeeja has played a significant role in aircraft and rotorcraft system identification and parameter estimation. Her expertise spans flight data analysis, including stability and control assessment, ground-handling model updates, sensor modelling, flight path reconstruction, performance evaluation, and aerodynamic database validation and refinement. She is currently contributing to major national programs such as LCA Tejas, the Kiran UAV aerodynamic database validation and update, and the SARAS ground-handling model update. Her work has been instrumental in the modelling and system identification of the Tejas aircraft, a pioneering effort in Indian aviation. Updates to the aerodynamic databases of LCA variants have supported improved control algorithms, envelope expansion, and the development of high-fidelity simulation models.

Her analysis across multiple configurations has aided the successful completion of Final Operational Clearance (FOC) for LCA Air Force variants and deck operations of the naval variant. Her original contributions to store grouping techniques have resulted in substantial reductions in required flight testing for system identification. She has also developed advanced methods for flight path reconstruction, improving the accuracy of air data parameters near envelope boundaries. Enhancements she introduced for real-time telemetry monitoring have contributed to the safe envelope expansion of the Tejas aircraft. As part of the aeromechanical clearance activity for the Mirage FOC upgrade program, she performed stability and control derivative estimation and handling-quality analysis using flight test data, the first initiative in India to undertake new store clearance without foreign assistance.

She has designed in-house tools and techniques for time- and frequency-domain system identification of both small-scale and full-scale rotorcraft. Additionally, she developed novel methods for runway identification and propeller drag modelling using SARAS ground-roll data, with potential applications in anti-skid brake management and short-runway operations. She is currently working on Synthetic air-data system modelling and AI assisted pilot training module for Simulators. Khadeeja has authored 25 technical papers. She has received the CSIR Technology Award for Group Achievement (2019), the CSIR-NAL Technology Shield for Group Achievement (2019), and the CSIR-NAL Excellence Award for Design, Development, and Project Execution (2018, 2012). She was also featured in the Aeronautical Society of India's Compendium on Women Achievers in Aerospace and Aviation (2023).



Kumari Asha

M.Tech. (Civil Engineering)
Senior Principal Scientist
Advanced Composites Division
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Ms. Kumari Asha is a Senior Principal Scientist in the Advanced Composites Division at CSIR-NAL, Bengaluru. She holds a Master of Technology (M.Tech) degree in Structural Engineering and has over two decades of research and technical experience in the field of aerospace structural design and analysis. Her primary area of expertise lies in the design, stress analysis, and weight optimization of composite aircraft structures. Over the years, she has made substantial contributions to several national-level aerospace programs, reflecting her commitment to advancing indigenous aviation technologies.

Ms. Asha has been deeply involved in key project tasks like Design and analysis of the composite wing for the 14-seater SARAS Civil Aircraft, Sizing and weight optimization of the composite wing for the 70-seater National Civil Aircraft Development (NCAD) project, Preliminary design, stress analysis, and weight optimization of the composite wing for the Advanced Medium Combat Aircraft (AMCA), Design, development, and structural testing of the wing, flap, and aileron of the HANSA-NG aircraft, Design and stress analysis of the composite vertical tail for the 19-seater SARAS Mk-II aircraft and Design, stress analysis, and testing of re-entry vehicle structures. Her technical proficiency has led to the successful realization and testing of critical aircraft components, significantly contributing to CSIR-NAL's mandate of supporting the nation's self-reliance in aerospace technologies.

In recognition of her outstanding group contributions to the HANSA-NG aircraft program, she was a member of the CSIR-NAL Technology Shield for Outstanding Group Achievement Award on the occasion of CSIR-NAL Foundation Day in 2022. This prestigious award acknowledged her role in the design, development, realization, ground testing, and flight testing of the HANSA-3(NG) aircraft towards its type certification.

Ms. Kumari Asha continues to be a key contributor to CSIR-NAL's structural engineering research, working at the intersection of innovation, precision, and national aerospace development.



Lakshmi Devi

M.Tech. (Electrical & Electronics)
Senior Principal Scientist
Aerospace Electronics & Systems Division
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Ms. Lakshmi has over 18 years of exemplary service at CSIR–NAL, making significant contributions in the design, development, and certification of aircraft electrical systems. She has played a vital role in several strategic civil aircraft programs of national importance, including HANSA-3, HANSA NG, CNM-5, SARAS PT1N, SARAS Mk II, and the Regional Transport Aircraft (RTA). Her primary expertise lies in the indigenous design, development, and qualification of Line Replaceable Units (LRUs) for civil aircraft, directly supporting the Make in India initiative and resulting in substantial foreign exchange savings for the country. Key contributions include the design and qualification of Distribution Box–3 (DB3) and the Nose Wheel Steering Interface Unit (NWSIU) for the SARAS PT1N aircraft. Both units were successfully evaluated during flight trials and demonstrated satisfactory performance without any reported snags. She also contributed to the certified electrical design of the electro-mechanical flap system for the HANSA NG aircraft, which performed satisfactorily during flight testing.

In the SARAS Mk II program, Ms. Lakshmi has made major contributions toward the complete indigenous design and development of the electrical power system architecture and its distribution network. Her work includes the development of the Primary Power Distribution System (PPDS) through an Indian private vendor, in-house design of the secondary electrical distribution system, indigenization of LED lighting through collaboration with CSIR–CSIO, and initiation of proposals for lithium-ion battery indigenization in coordination with multiple government agencies. She also designed the electrical architecture and power distribution system for the HANSA NG aircraft powered by the Rotax 912 i-series engine, which employs a dual-channel Full Authority Digital Engine Control (FADEC) system for ignition and fuel injection. To achieve weight reduction, lithium-ion batteries were introduced, leading to the release of a Certification Review Item (CRI) by the certification agency. This milestone established HANSA as the first Indian civil aircraft to fly with lithium-ion batteries. Additionally, LED lighting systems were introduced to reduce overall power consumption.

Her outstanding contributions have been recognized with several honors, including the CSIR-NAL Technology Shield for Outstanding Group Achievement for the design, development, and project execution of the CNM-5 aircraft; a Special Commendation Award for her role in the safe and successful flight testing of the SARAS PT1N aircraft; and a Special Mention Award for her contributions to the design, development, realization, ground testing, and flight testing of the HANSA NG aircraft.



Dr. Lakshmi R V

Ph.D. (Sol-gel Coatings), Chemical Science
Senior Principal Scientist
Surface Engineering Division
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Lakshmi R V, as a scientist, has over 18 years of experience in research and development of various coatings in the Surface engineering Division of CSIR-NAL, Bengaluru. Her expertise is in the area of sol-gel and polymeric coatings for various functional applications on aircraft structures. She has carried out extensive work on sol-gel based superhydrophobic-oleophobic coatings and corrosion resistant coatings using simple yet easily scalable methods and materials. Her work on hard superhydrophobic coating by spray technique via sol-gel route was considered first of its kind to be reported in the literature. Her thesis work focused on a new class of sol-gel based silica-alumina coatings for corrosion protection of aerospace grade aluminium alloy 2024. Her research also extended to synthesizing cerium-based nanomaterials as corrosion inhibitors and formulating their coatings in sol-gel matrix. This was executed for replacing the conventionally used carcinogenic Cr (VI) treatment. Cerium oxide nanomaterials with different morphologies and oxidation states were prepared by adopting different chemical routes like micro-emulsion, hydrothermal, solvothermal, sol-gel and solution combustion methods. She explored Scanning Kelvin Probe method to identify the apparent corrosion prone regions on the coatings. The localized defects were studied by measuring the Volta potential or Contact potential distribution at the substrate-coating interface. This work proved to be a scientific augmentation in the area of sol-gel coatings for corrosion protection of aerospace alloy. She was one of the principal investigators in developing sprayable and light weight radar absorbing paint with in-house synthesized raw materials for stealth application in 8-12 GHz range. She has been working on development of polymeric thermal insulation paint for CSIR-NAL's aircraft development program. The paint has been proven to impart thermal protection and insulation to fuselage surface against impinging hot exhaust plume. The paint has been accorded with Pre-Production Clearance from RCMA (F&F), CEMILAC for airworthiness. Ceramic oxide based erosion resistant polymeric coatings were also developed for wind turbine blades as a part of the collaborative project with DTU, Denmark. She was instrumental in indigenizing a conductive paint for electrostatic charge dissipation on GFRP based aircraft structures, which is being certified by DGCA for application on HANSA-NG. Her research work has resulted in about 40 publications in reputed international peer reviewed journals, 1 world patent and 5 Indian patents, 2 book chapters, about 30 conference presentations and 58 institutional project documents. She has served as a member of the Senate of AcSIR, for a two-year term (2017-2019) and was involved in the maintenance of standards of instruction, education and examinations in the Academy. She was conferred with the prestigious CSIR-Young Scientist Award in Chemical Sciences by the Council of Scientific & Industrial Research (CSIR) in 2016. The remarkable contributions made to aeronautical science through her doctoral thesis was recognized and she was honoured with the (Best Thesis) ICAS-IFAR Award by the reputed International Council of the Aeronautical Science (ICAS) and the International Forum of Aviation Research (IFAR) in 2020. She has also received the CSIR-NAL Best Technology Award and Outstanding Team Performance Award in 2024. These awards are a testament to her accomplishments and the contributions made in creating innovative solutions through simple approaches.



Lakshmi P

M.E. (Software Engineering)
Senior Principal Scientist
Quality Assurance & Airworthiness Division
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Lakshmi P, M.E. (Software Engineering) from Bangalore University, serves as a Senior Principal Scientist in the Quality Assurance and Airworthiness Division at CSIR-National Aerospace Laboratories (CSIR-NAL). With extensive experience in software systems for aerospace applications, airworthiness compliance, and design assurance, she has made significant contributions to national civil aircraft programs and institutional software development.

Her technical expertise spans critical on-board systems for the SARAS aircraft, including the Stall Warning and Aircraft Interface Computer System, Automatic Flight Control System, and the Engine Indication and Crew Alert System. She has also contributed to the development of the Smart Fatigue Meter and its enhanced version, supporting aircraft health monitoring and operational safety.

In addition to her avionics and control system work, Lakshmi has led innovative research efforts such as Automatic Speech Recognition for controlling Micro Air Vehicles (MAVs) under the SIGMA AR&DB project. Her contributions extend beyond aerospace platforms to enterprise-level digital solutions for CSIR-NAL, where she has been instrumental in developing the Automatic Project Management System (APMS), AROGYA Health Management Software, KHOJ Recruitment Software, and the Project Assistant Recruitment Portal. These systems have strengthened institutional workflow efficiency, transparency, and digital governance. Her role in airworthiness is equally impactful. She has been actively involved in verifying compliance with airworthiness codes for both the SARAS and HANSA aircraft, contributing to critical certification processes. She also plays a central role in maintaining the Design Assurance System necessary for CSIR-NAL's continued Design Organisation Approval (DOA) from the Directorate General of Civil Aviation (DGCA), ensuring alignment with regulatory standards and quality protocols.

Lakshmi's scholarly contributions include over five publications in conferences and journals, supplemented by more than 300 technical documents related to the SARAS and HANSA aircraft programs. These works reflect her deep engagement with airworthiness analysis, system validation, and documentation essential for aircraft certification. Through her multidisciplinary expertise-spanning software engineering, avionics, digital systems, and regulatory compliance-Lakshmi P has significantly advanced CSIR-NAL's mission in aerospace research, indigenous aircraft development, and quality assurance. Her work continues to support national aviation programs and strengthen the organization's technological capabilities.



Leela Shawani A

B.E. (Instrumentation & Controls)
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Ms. Leela Shawani is experienced in experimental wind tunnel data generation with a strong focus on instrumentation, measurement and control systems. She has actively contributed to the ongoing modernization of national wind tunnel facilities, significantly enhancing their technological capabilities. This work supports the evolving needs of key stakeholders, including major aerospace organizations and leading scientific and technological institutions, ensuring the facilities are well-positioned to meet future aerodynamic testing and research demands.

Ms. Leela Shawani's key contributions include the development and integration of advanced data acquisition systems and novel measurement techniques. She played a pivotal role in the design and implementation of NI-LabVIEW-based systems for: Unsteady and steady pressure measurement systems, Integrated Tunnel Control System (ITCS), Wind Tunnel Data Acquisition Systems and Pitch damping measurement techniques. These innovations significantly improved facility productivity, operational efficiency, and data accuracy, enabling the timely execution of critical national mission projects and strengthening the infrastructure for advanced aerodynamic research.

Ms. Leela Shawani is involved in Force and moment measurements, Air-intake characterization tests, Steady and unsteady pressure measurements, Half-model support system testing, Multi-booster separation studies, Hinge moment measurements, Store carriage and separation tests, Forced oscillation technique for dynamic stability, Aero-elastic testing, Helmet aerodynamic tests. She has 4 publications.



Dr. Porkodi P

Ph.D. (Chemistry)
Senior Principal Scientist
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Dr. P. Porkodi, Senior Principal Scientist, is working in Center for Carbon Fiber and Prepreg. The Center for Carbon Fiber and prepregs (CCFP) at CSIR-NAL is developing process technology for aerospace grade carbon fibers. I am involved in process planning and execution and quality control of the polymer and fibers in the development of different grades of carbon fiber and low cost carbon fiber from biomass feedstock. This involves the characterization of the polymers, intermediates and fibers for process monitoring/control and data analysis and documentation. CCFP is the only facility of its kind in INDIA working for the indigenous development of the carbon fibers manufacturing technology. Her interests are in polymer synthesis and characterization, carbon fiber technology and solid ionic conducting material synthesis.

She has more than 18 years of experience in the carbon fiber research. Developed new methodologies for characterization of polymers and fibers. Apart from the carbon fiber research I have research experience on the synthesis of solid ionic conducting materials which finds application in batteries, Pollution monitoring and mitigation system. The activities at CCFP has resulted in certification of carbon fiber produced as the standard modulus grade carbon fiber (Toray's T300 equivalent) from Centre for Military Airworthiness and Certification (CEMILAC). CEMILAC Certification of indigenously prepared carbon fiber and component level evaluation of manufactured carbon fiber in break disc and pad for rotors in helicopters. The development of carbon fiber has attracted many industries like BARC, Reliance, Tata Steel, MIDHANI for transfer of know-how technology.

She has been awarded as a ISAMPE Outstanding Design and / or Process Development Award 2012 for the Development of Process Technology for Standard Modulus Grade Carbon Fibers and Transfer of Technology to Industry.



Dr. Mrudula G

Ph.D. (Atmospheric Sciences)
Senior Principal Scientist
Centre for Electromagnetics Division
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Dr. Mrudula is currently involved in the development, testing, and certification of indigenous Lightning Protection Schemes (LPS) for defence and civilian airborne radomes, as well as simulation studies towards the certification of HIRF, EMI/EMC, direct lightning, and indirect lightning effects on civilian aircraft. These activities are carried out as part of projects sponsored by defence organizations and in-house programmes. She is also working on the development of attenuation correction methods for radomes and radars operating at various frequencies, and on the development of improved aviation nowcasts through hybrid modelling using AI/ML and statistical techniques for the India Meteorological Department (IMD). Under the HAPS programme, she is involved in the analysis of weather parameters for launch decision-making.

Dr. Mrudula was involved in the Government of India's Indo-UK collaborative initiative aimed at improving monsoon forecasts, during which she worked with various research institutions in India and the UK. As part of this project, algorithms were developed for the identification, development, and tracking of mesoscale convective systems (MCS) and cloud clusters. She was also part of the National Monsoon Mission, which focused on the indigenous development of an Indian monsoon model, contributing specifically to the development of a boundary layer module. Dr. Mrudula worked with the Radar Development Group of ISRO, where she was involved in research and development of Doppler Weather Radar (DWR) products, including the development of algorithms for primary and secondary DWR-derived products. She also contributed to the first-time development of algorithms for the retrieval of altitude profiles of temperature over the tropics using MST Radar and Lidar, in collaboration with the University of Kerala and SPL, VSSC.

She has more than 200 publications, including books, book chapters, journal papers, conference papers, and restricted documents. She has delivered lectures at numerous international and national conferences. Several of her publications have been recognized as top-cited papers by various publishers. She was the recipient of the Best Woman Scientist Award from CSIR-NAL in 2019. She has also received national and state merit scholarships and was the university second-rank holder in her postgraduate programme. She currently serves as a subject expert in Meteorology for the Union Public Service Commission (UPSC), Government of India. In addition, she is a reviewer for several journals, a thesis examiner for various universities, and a technical expert on multiple review committees. As a faculty member of AcSIR, she is involved in teaching Research Methodology, Numerical Methods, and Atmospheric Electromagnetics.



Premalatha

M.Tech. (System Analysis & Computer Applications)
Senior Principal Scientist
Computational & Theoretical Fluid Dynamics Division
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Ms. Premalatha's achievement has been in developing robust and well-engineered C++ codes with emphasis on Panel Methods, developing coding conventions and adopting the same for Panel method to ensure portability. Same effort was also done to rewrite complex numerical weather code. Also extensively documented resulting in an exhaustive online version. She introduced an important concept of FlowGraphs for this weather code – a unique approach to visualize code logic developed coding conventions for weather code and applied ideas of Unified Modeling Language (UML) concepts for software specifications. Main philosophy has been to demark input modules, processing engines and output modules for all scientific software development with a view to avoid hard-wiring of numbers and use of global space to keep software highly modular.

Instrumental in developing interpolation code used for incorporating installation effects for Saras propeller analysis prior to first flight clearance. Using C++ coding, has developed wind turbine blade stacking code for generating geometry of 500 kW wind turbine blades then manufactured and erected by NAL team. NURBS technology developed using C++ was deployed.

Continues to maintain NAL Panel Method, steady (NPM) and unsteady (UPM) versions that finds applications in aerospace domain, especially for NAL aircraft projects RTA and Saras projects that have benefited.

Visited DLR's (German Aerospace Research) Fluid Mechanics institute at Goettingen for six months as part of collaboration under NAL-DLR exchange programme. Visited Hong Kong to present a paper at ACFD8 Conference, Hong Kong University of Science & Technology.

Sponsored projects - Tata Sons, ADA, AR&DB, CSIR (FBR), FYP Projects: 11, 12 as well as NMITLI Projects and in-house projects (CFD Software development, RTA etc.) too. Worked as a team for various aircraft, non-aerospace as well as strategic projects. Attended 3 Training Programmes sponsored by DST. Divisional meeting Convener, Divisional representative to provide inputs for various forums and for NAL website upgradation, Volunteer at Airshows, Committee member - various technical workshops, conferences, ACFD7 and Sarod2009 conference proceedings in-charge, given invited talks at forums. Handled various engineering projects students. Areas of Research Work include Analysis of complex configurations using Panel Methods and CFD software, Application of advanced programming techniques for CFD software development. She has a total of 44 publications to her Credit and recipient of NITK Alumni women achiever 2023 award.



Priyadarshini L

M.Tech. (Digital Electronics & Communication)
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Ms. Priyadarshini, has over 17 years of experience in flight test instrumentation (FTI) at CSIR–NAL. She has played a pivotal role in the design and development of civil aircraft prototypes such as SARAS, HANSA, and CNM5. Her contributions include the development of a data acquisition system for an open-air engine test facility, along with extensive expertise in both on-board flight test instrumentation and ground telemetry systems for real-time data acquisition and monitoring during flight trials. She has been actively involved in the inspection of FTI systems and in clearing aircraft for taxi and flight trials. Currently, she is working on the advanced design of an Ethernet-based Flight Test Instrumentation system and the electrical interface design of the SARAS Mk II prototype aircraft. Her research output includes two journal publications and six conference papers.

Awards and Honors: CSIR-NAL Technology Shield for excellent contribution to “HANSA-NG for Design, Development, Realization, Ground Testing & Flight Testing of HANSA-3 (NG) Aircraft towards Type Certification. “Best Paper Presentation Award for the paper titled “End-to-End Flight Test Instrumentation System of a Light Transport Aircraft” at the National Women Science Congress organized by Swadeshi Vijnana Andolana. CSIR-NAL Excellence Award for the “Design and Development of Engine Indicating and Crew Alerting System for Aircraft Display System.” Best Paper Award for the paper titled “Optimized Design of Aircraft Electrical Wiring Interconnection Systems (EWIS) for Commuter Category Aircraft” presented at the conference “Recent Interdisciplinary Trends in Engineering & Science for Industry 4.0,” organized by REVA University, Bengaluru, India, and Universiti Tunku Abdul Rahman (UTAR), Malaysia.



Dr. Sandhya Rao

Ph.D. (Chemistry)
Senior Principal Scientist
Advanced Composites Division
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Dr. Sandhya Rao is a Senior Principal Scientist in the Advanced Composites Division. She holds a Ph.D. in Chemistry from Bangalore University, awarded in 2008 for her pioneering research on radiation curing of aerospace-grade polymers and polymer matrix composites.

Her research spans shape memory polymers (SMPs), microwave processing, and advanced polymeric materials for aerospace applications. A key highlight of her contributions includes the development of a Dual Frequency Microwave Cure Facility for aerospace composites in collaboration with industry partner M/s Enerzi, Belagavi—a unique achievement in the Indian aerospace sector.

Dr. Rao has authored over 15 journal papers, contributed to more than 20 conferences, and written one book chapter on shape memory polymers. She holds two granted patents, including innovations in rapid curing using dielectric moulds (2015) and processes for recoverable deformations in SMPs (2018). Her work was also presented internationally at SMART'11 in Saarbrücken, Germany. She has actively mentored students across M.Tech., BE, M.Sc., and Ph.D. programs, contributed to over 30 project documents, and regularly delivers lectures in ACSIR courses. She has also submitted four project proposals and one Ph.D. proposal aligned with CSIR-NAL's strategic research goals.

Dr. Rao's work has been recognized through several awards. Few of them are Best Innovation Award (2021) for her leadership in developing epoxy-based smart SMP tooling, Best Woman Scientist Award (2015), Excellence in Research Award (2014) for SMPs, and Technology Shield for Group Achievement (2022) as part of the HANSA-NG team. In addition to her scientific contributions, she actively promotes science communication. She served as the Chief Editor for 5 consecutive years of KANAADA, CSIR-NAL's Annual Kannada science journal, and edited its milestone 50th issue in 2024. She also served as Secretary of ISAMPE and the Indian Carbon Society (Bangalore Chapters). Through her multidisciplinary expertise and commitment to innovation, Dr. Sandhya Rao continues to drive advancements in smart materials, rapid & energy-efficient processing of composites and associated Aerospace technologies.



Sandhya Rudrachar

M.Tech (Machine Design)
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Structural Technological Division
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Smt. Sandhya R is a highly experienced professional in the field of airframe structural design, with significant contributions to indigenous civil aircraft development programs at National Aerospace Laboratories (NAL). Her work has been instrumental in the design and development of the 14-seater and 19-seater Light Transport Aircraft (SARAS), as well as the 2-seater trainer aircraft (HANSA). Her expertise spans conceptual layout design, feasibility studies, and detailed design using Design for Manufacture and Assembly (DFMA) principles. She has been actively involved in generating fabrication and assembly drawings for major airframe components, supporting manufacturing activities, and ensuring successful realization and integration of components into aircraft systems.

Smt. Sandhya R is a DGCA-certified Showing Compliance Engineer (SCE) for the indigenously developed SARAS 19-seater prototype, a high-wing, twin turboprop, multi-role aircraft. Her technical leadership has been pivotal in implementing critical design modifications, including the ventral fin and structural supports for electrical and Flight Test Instrumentation (FTI) systems. She also played a key role in resolving technical issues in the SARAS 14-seater prototype, enabling its return to flight testing and significantly contributing to the revival of the program. Her contributions to the design and development of the engine mount and nacelle structures for the SARAS 19-seater aircraft have greatly advanced India's capabilities in aircraft structural design, reinforcing the importance of indigenous technology development in the aerospace sector.

In recognition of her outstanding work, she has received multiple in-house awards, including Outstanding Team Performance and Commendation Awards. Currently, she leads a design team responsible for the development of the nacelle and engine mount structures for the SARAS 19-seater aircraft (Tractor Version), continuing to play a vital role in advancing the nation's aerospace ambitions.



Shanthini G

M.Tech. (Structures)
Senior Principal Scientist
Structural Technological Division
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Ms. Shanthini G has expertise and a vast experience in the field of aeroelasticity and flutter certification for aircraft industry using computational techniques. Her work is primarily associated with providing crucial support to the strategic sector contributing to national and international level programs for flutter recertification for either new stores or design changes. Her area of expertise also lies in predicting flutter boundaries for all regimes (subsonic, transonic and supersonic) of flight operation using ground vibration test results. She has demonstrated her expertise to upgradation programmes involving new stores integration for fighter aircrafts such as Jaguar, Mirage 2000, Su 30MKI.

She has made immense contributions to indigenous Indian aircraft development programs like HANSA, SARAS PT1N for flutter certification. She has also contributed to programs of ADA, ADE and ISRO. She is currently working for CSIR-NAL programs like High Altitude Pseudo Satellite (HAPS) and 19 seater SARAS MkII.

She has to her credit three CSIR-NAL Technology Shield for Outstanding Group Achievement awards and her research has resulted in 5 journal publications and 8 conference proceedings.



Sheeja Sunil

M.Sc. (Chemistry)
Senior Principal Scientist
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Ms. Sheeja Sunil, Senior Principal Scientist with an MSc in Chemistry, has made significant contributions in the domain of carbon fiber technology, particularly through her work at the Center for Carbon Fiber and Prepreg (CCFP), CSIR-NAL. Her major expertise lies in the development of high-performance carbon fibers a critical and strategically important raw material for aerospace structural composites.

With over 20 years of experience, her work spans acrylic polymer synthesis, wet spinning, fiber preparation, and product qualification, covering the complete process technology essential for producing aerospace-grade carbon fibers. She has successfully developed the standard modulus grade carbon fiber technology and achieved certification from the aerospace material certifying agencies, DGAQA and CEMILAC. Additionally, she has established the Advanced Characterization Facility at the Center for Carbon Fiber and Prepreg, strengthening CSIR-NAL's capability in fiber and composite evaluation. Her technological contributions also include the transfer of process know-how for carbon fiber technology with a production capacity of 25 tons per annum.

Her achievements have been recognized through prestigious awards such as the CSIR-NAL Technology Shield in 2011 for Outstanding Group Achievement in transferring standard modulus carbon fiber technology to industry, and the ISAMPE Outstanding Design and/or Process Development Award in 2012 for the development and successful transfer of carbon fiber process technology. She has authored seven publications and continues to be actively engaged in advancing India's capabilities in high-performance carbon fibers.



Shikha Jain

M.Tech. (Mechatronics)
Senior Principal Scientist
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Ms. Shikha has been extensively involved in the development, validation, and simulation of flight dynamic models (FDM) across multiple fixed-wing aircraft programs, with a particular focus on integrated modeling, simulation, and system evaluation. She has developed comprehensive integrated FDMs that incorporate structural flexible modes for high-altitude platforms (HAPs), enabling accurate prediction of flight dynamics and aircraft behavior under varied operating conditions.

In addition, she has established Software-in-the-Loop (SILS) and Hardware-in-the-Loop (HILS) simulation environments by integrating the FDM with Ardupilot SITL and Veronte autopilot hardware. These facilities facilitate control algorithm development, system testing, and virtual flight scenario simulations, contributing to both manned and unmanned aircraft programs. Her work has played a key role in the country's strategic fighter programs, including significant contributions to aerodynamic modeling for the Jaguar fixed-base full-motion simulator, aeromechanical clearance of new store configurations for Mirage aircraft, and development of airdata estimation algorithms independent of GPS for the LCA aircraft.

Her research expertise spans modeling and simulation for both manned and unmanned aircraft, sensor modeling and calibration, and the development of recursive sensor fusion algorithms. She has also contributed to the establishment of hardware and software-in-the-loop facilities for various classes of unmanned aerial vehicles, supporting advanced control development and system integration.

Ms. Shikha's areas of research include dynamical system modeling and simulation, flexible aircraft modeling, recursive sensor fusion techniques, and optimization methods. Her work has consistently advanced the capabilities of aircraft simulation, control, and performance evaluation at CSIR-NAL.

Her contributions have been recognized through multiple awards, including the CSIR Technology Shield (2019), CSIR-NAL Technology Shield (2019), and the CSIR-NAL Excellence Award (2017). She has authored 20 publications in peer-reviewed journals and conferences, reflecting her sustained contribution to aerospace research, modeling, and simulation.



Sivaranjani T

M.Tech. (Engineering of Structures - Aerospace)
Senior Principal Scientist
Structural Technological Division
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Ms. Sivaranjani has over 15 years of experience in Research and Development as a scientist in various areas in Structural Technological Division of CSIR-NAL, Bengaluru. Her expertise is in fatigue and fracture mechanics, structural design and analysis of aircraft structures. She contributed as a structural designer and analyst of major Indian aircraft programs including SARAS, HANSA and RTA.

She played a major role in the static clearance of all composite HANSA NG aircraft. She played a key role in establishing the capabilities of computational fatigue analysis for aircraft structures in Structural Technological Division. She developed the fatigue load spectrum for the airframe in accordance with FAR 23 regulations. She demonstrated proficiency in fatigue and damage tolerance assessments of metallic components of aircraft structures. She is the authorized design signatory responsible for fatigue and damage tolerance clearance of the aircraft structures.

Ms. Sivaranjani is having the research expertise in fatigue and fracture mechanics, composite structures, fatigue reliability of aircraft structures. She has executed focus based research projects in these fields. Her research and developmental activities resulted in 4 journal papers, 9 conference papers, 56 project documents, 4 technical reports and 21 Design reports. She is adept at both applied research and practical implementation of advanced structural analysis techniques, supporting the structural integrity and airworthiness of aircraft throughout their service life. She is currently conducting research on predictive models for estimating the in-service remaining life of aircraft structures.



Swapna L

M.Tech. (Machine Design)
Senior Principal Scientist
National Trisonic Aerodynamic Facilities Division
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Ms. Swapna is experienced in the design of high speed wind tunnel models, Integral Balances, Hinge Moment Balances, Special Supports systems and specializes in the design of wind tunnel models for force and moment measurements, hinge moment measurements, steady and unsteady pressure measurements. She has executed important national projects on design of wind tunnel models for DRDL, RCI, VSSC, ADE, HAL, ADA, for aerodynamic data generation used to develop control law and configuration aerodynamics at design stage and its upgradations.

Ms. Swapna has designed special supports which include High alpha supports, offset sting supports, bent sting, beta support, dorsal strut support and six degree of freedom manual rig. She has developed a formulation to estimate model annular gap and deflection constants for the model- balance- sting combination. She has also designed miniature six component force measuring instrument -integral balance for measuring the forces and moments on the stores, to assess the safe release from the aircraft. She has also conducted research on "optimisation of the metric elements" of the miniature force balances with unconventional shapes to increase the sensitivity and reduce interactions. Her contribution includes design of special balances for control surface hinge moment measurements.

Ms. Swapna has around 40 publications which include journal articles, conference papers and institutional reports. She was part of the team award conferred on CSIR-NAL as "Best Laboratory / Institutional award" for BrahMos day 2014 for successful conduct of wind tunnel test.



Swetha

M.Tech. (Electronics)
Senior Principal Scientist
National Trisonic Aerodynamic Facilities Division
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Ms. Swetha has 18 years experience as a Scientist in National Trisonic Aerodynamic Facilities (NTAF) Division and is currently the In-charge for the Instrumentation & Controls (I&C) team of 0.6m Trisonic Wind Tunnel (TWT) facility at NTAF. She is actively involved with the design, development and upgradation of control systems and data acquisition systems of 1.2m and 0.6m TWT facilities. She is responsible for reviewing test requirement, planning and executing the instrumentation scheme and data acquisition systems for force/moment and pressure measurement of wind tunnel models leading to a significant External Cash Flow (ECF) every year.

Ms. Swetha has successfully developed a National Instruments (NI) based tunnel control system for the operation of 0.6m TWT which caters for stand-alone operation of tunnel subsystems and blowdown tests in different modes incorporating crucial safety interlocks and emergency features. She has developed a NI-based ESP Multiple Pressure measurement system for 0.6m and 1.2m TWT which fulfills the requirement of calibration and data processing. She has been instrumental in generating the aerodynamic data from both 1.2m and 0.6m TWT on various scaled launch vehicle models such as GSLV, LVM3, CES (Crew escape System) for Gaganyaan and missile models such as SFDR, Dhvani, RudraM, LRASHM, ASM, FSAPDS, VEDA which has led to structural clearance/refining of the design for various national missions enhancing the capability of the country's space and defence programs. She was instrumental in the upgradation of the control system of Variable Mach number Flexible Nozzle (VMFN) of the 0.6m TWT which resulted in the extension of the system's lifespan in turn sustaining the testing capability of 0.6m tunnel.

Ms. Swetha has presented her work at several National and International Conferences and attended Technical Workshops and Training programmes. She has been an active organizing and Technical Committee member for various National/ International conferences conducted by CSIR-NAL. She has around 30 publications which include conference papers and institutional reports.



Dr. Usha S

Ph.D. (Mathematics)
Senior Principal Scientist
Computational & Theoretical Fluid Dynamics Division
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Dr. S. Usha completed her Ph.D. in mathematics from Indian Institute of Science, Bangalore in 1997. She was a Research Associate from 1999 to 2008 in the department of Mechanical Engineering at the Indian Institute of Science, Bengaluru. She joined the Computational and Theoretical Fluid Dynamics (CTFD) division of CSIR - NAL in 2008. Dr. Usha is one of the few scientists of the Division working in the area of Theoretical Fluid Dynamics.

Dr. Usha's areas of research are Flow instability, free-streamline flows, viscous-inviscid interactive flows, transitional and re-laminarizing flows, theoretical models for passive heating/cooling of buildings. The research activities carried out by Dr. Usha in these areas has lead to publications of papers in 8 journals and 4 conferences.



Principal Scientists



Jayashree S

B.Sc., MLISc
Principal Scientist
Information Centre for Aerospace Science & Technology
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Ms. Jayashree S, Principal Scientist at the Information Centre for Aerospace Science and Technology (ICAT), CSIR–NAL, holds a B.Sc. and an MLISc. She has been an integral part of the Knowledge Resource Centre (KRC) for over 25 years. Throughout her tenure, she has played a pivotal role in supporting the research ecosystem by managing information resources and services, enabling seamless access to knowledge, curating digital collections, and offering expert guidance to researchers across CSIR–NAL and other CSIR institutions.

Her professional expertise spans several key domains, including serials management, digital archiving, web-based IT services, and comprehensive research support. In serials management, she has overseen the planning, subscription, and renewal of print and electronic resources—journals, standards, patents, and market reports—through direct procurement as well as via the NKRC–CSIR consortium. She ensured uninterrupted access to licensed content by contributing to platforms such as the E-Journals Gateway and the Union Catalogue of CSIR Libraries, and by providing usage analytics to guide subscription decisions.

She has supported research teams extensively by conducting literature and patent searches across global databases, performing plagiarism checks using specialized tools, and offering journal selection assistance. She also developed the searchable web-based Aerospace News Clipping service and compiled the Aeronews digest. Additionally, she managed the ICAT website and the AeroInfo portal.

A major part of her contribution includes leading the development of the Institutional Repository—a digital archival platform for CSIR–NAL’s research output—and contributing to the CSIR Harvester repository. She has delivered a wide range of services related to digital archiving, content management, information access, and outreach for CSIR–NAL users. She also actively contributed to national digital initiatives such as P-DAINAR, DALIC, and KNOWGATE. Her responsibilities have included traditional library management functions such as stock verification, weeding of outdated materials, and performing ISO internal audits as a certified quality auditor.

She has published 16 papers in journals and conferences and is currently engaged in institutional legacy data digitization and archival efforts. Her work consistently advances knowledge discovery, access, and dissemination within CSIR–NAL and the broader aerospace research community.



Jeevitha M

M.Tech. (Material Resources Engineering)
Principal Scientist
Surface Engineering Division
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Ms. Jeevitha has made significant contributions to the development of solid particle erosion and corrosion resistant coating technology, specifically for compressor impellers and blades.

In recognition of her original contributions to science and engineering, she received CSIR-NAL Excellence Award in Research for the year 2021-22. She has also received two Best Oral Presentation Awards and one Best Poster Presentation Award at national conferences. Her research interests include solid particle erosion resistant coatings, nano-multilayer and nanocomposite coatings via sputtering, and two-dimensional functional materials. She has authored 10 SCI journal publications, holds one granted Indian patent, and has presented 16 papers at National and International conferences.



Kshama S

M.Sc. Electronic Science
Principal Scientist
Structural Integrity Division
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Ms. Kshama S has over 15 years of experience in Research & Development as a scientist in Structural Integrity Division of CSIR-NAL, Bengaluru. Her expertise is in handling control systems and instrumentation for integrity evaluation of aircraft components or structures, carrying out conventional & advanced non-destructive testing techniques to evaluate various aircraft structural components. She has handled operation of single, multi-channel control systems, operation of data acquisition systems, carried out NDT techniques like Eddy current testing, Ultrasound testing, Visual testing, IR Thermography, etc. She has developed parametric optimization of NDT procedures for implementing non-destructive testing on field for extending the life of structural components of military aircrafts & helicopters for Indian Air Force. Non-destructive testing equipments along with probes relevant for aerospace applications were setup by her at NDT lab in the division. These equipments & probes and the developed procedures were effective in successfully carrying out various NDT inspections on life extension programs that has resulted in airworthiness clearance of military aircraft components/ structures. She was also involved in development and supply of indigenous NDT probes to ISRO, IAF, etc. She is contributing continuously and dedicatedly towards major in-house aircraft programs like SARAS & HANSA, as well as strategic sector projects of the division that have resulted in Indigenization and saving of large foreign exchange for the country.

Ms. Kshama is instrumental in establishing advanced non-destructive facilities like Phased array C-scan ultrasound system, handheld IR thermal camera, etc. in structural integrity division. She has co-ordinated 15 days Industrial training and certification program carried out for Air force warriors at the division and her contribution for its success is commendable.

Ms. Kshama has presented many papers in national conferences and has got many institutional publications. She has got level II Eddy current NDT certification for her credit.



Sivasakthi M

B.E. (Electronics & Communication Engineering)
Principal Scientist
Aerospace Electronics & Systems Division
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Ms. Sivasakthi has major contributions towards CSIR-NAL aircraft programmes such as SARAS , HANSA etc. for design and development of ground telemetry station. Since it is essential to monitor the flight tests in real-time to ensure that all the parameters are within limits thereby ensuring the safety of the aircraft and test crew.

In order to achieve this challenging task, the ground telemetry was segregated as two sub systems namely RF subsystem and the monitoring subsystem and implemented each subsystem with a DUAL-REDUNDANT configuration in order to eliminate SINGLE-POINT FAILURES thereby ensuring the high degree of Reliability. This will also enhance the flight safety tremendously as there is minimal link loss during real-time telemetry monitoring of Flight tests.

Apart from this, she has also evolved her expertise in designing mobile telemetry which is mandatory for CSIR-NAL outstation trails such as Aero-india, Sea-level, Re-light etc. She has closely worked with HAL- ARDC team for countries premier Aero -Show for showcasing SARAS PT1N display. It was mandatory to monitor the prototype which has been flying with special approval for Air display to ensure the safety.

In particular her mobile telemetry design of HANSA-NG for sea-level in pudhucherry has been a major milestone towards type certification of HANSA. Yet, another experience of supporting the outstation trails by doing the statistical survey of existing system available any place and integrating the CSIR-NAL system for the flight trials. Once such trial was HANSA -NG relight trial in aeronautical testing range in Chellekare, Chiradurga. She has been awarded as "CSIR-NAL Best Women Scientist" for Configuration of Ground Telemetry Station for Real-time Monitoring of SARAS aircraft (PT1N) Flight Tests.



Vineetha Joy

M.Tech. (RF & Microwave Engineering)
Principal Scientist
Centre for Electromagnetics Division
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Ms. Vineetha Joy is actively involved in various R&D programs of strategic importance spanning domains like EM design & development of stealth technologies (low RCS electronic warfare antennas, metasurface based radar absorbing structures, radar absorbing materials) and in-house development of computationally efficient software for RCS prediction and electromagnetic EM optimization. She is also involved in research activities related to generative AI for aerospace applications, computational electromagnetics, EM design and performance analysis of radomes, hybrid numerical techniques for scattering analysis and electromagnetic characterization of potential materials for airborne structures. She has participated in various sponsored/grant-in-aid projects in these areas as principal investigator as well as contributing team member.

She has authored/co-authored more than 250 research publications including 2 books, 5 book chapters, 10 refereed international journal papers, 42 papers in conference/symposium proceedings, 166 project documents, 57 test reports, and 2 special publications. In recognition of her significant contributions towards the indigenous development of broadband radar absorbing structures for aerospace applications, Mrs. Vineetha Joy was awarded the Institution of Electronics and Telecommunication Engineers (IETE) Young Scientist Award for the period 2020-2021. With respect to academic collaborations, she closely associates with reputed universities by undertaking mutually beneficial research work involving graduate and post graduate students in various areas pertinent to applied electromagnetics for aerospace applications.



Senior Scientists



Dr. Indu Elizabeth

Ph.D. (Engineering Sciences)
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Dr. Indu Elizabeth has contributed to the development of a corrosion detection system for aircraft and the formulation of an indigenous conductive paint tailored for aerospace applications. She has also worked on the development of piezoresistive sensors for monitoring human body movements in electronic skin (e-skin) applications at CSIR-NAL.

In the field of national metrology, she has worked towards the establishment and maintenance of India's primary force and torque standards at CSIR-NPL, ensuring precision and traceability in mechanical measurements. She has also significantly contributed to the development of Indigenous Li-ion battery technology. She is also currently serving as a Senate Member and Assistant Professor in the Faculty of Engineering Sciences of the Academy of Scientific and Innovative Research (AcSIR), contributing to scientific governance and research education initiatives.



Pallavi Singh

M.Tech. (Aerospace Engineering)
Senior Scientist
Aircraft Mechanical Systems Division
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Ms. Pallavi Singh is a Senior Scientist in the Aircraft Mechanical Systems Division (AMSD) at CSIR-NAL. She holds an M.Tech. degree in Aerospace Engineering and has established strong expertise in the design, analysis, and simulation of aircraft landing gear systems for national aerospace programs.

Ms. Singh plays a key leadership role in the SARAS Mk-II aircraft program, where she leads the Landing Gear (LG) System Team. Her responsibilities encompass undercarriage design, development, analytical evaluation, and multi-body dynamic simulation. She has been instrumental in building core competence at CSIR-NAL in landing gear simulation and analysis, particularly through the effective use of ADAMS software and supporting analytical methodologies. She has also contributed significantly to the upskilling and technical mentoring of Project Associates in this domain.

Ms. Singh has made major technical contributions to critical program milestones, including the successful completion and presentation of the Landing Gear System Critical Design Review (CDR) to internal and external review committees. She has prepared and released several system-level and component-level requirement and specification documents, forming a strong technical foundation for the SARAS Mk-II program. Her work includes detailed estimation of nose wheel steering actuator loads under varying operational parameters and leading the indigenous design, development, and qualification of the Nose Landing Gear actuator. These developments have generated valuable organizational know-how and are expected to benefit future national aircraft programs.

In addition to SARAS Mk-II, Ms. Singh has contributed to the RTA-90 program, specifically in landing gear load estimation and tyre selection. She has also participated as an analyst in the design and development of a novel follow-up door kinematics system for the SARAS Mk-II aircraft. Her technical outputs include comprehensive design reports, system requirement documents, technical memoranda, and load analysis reports, which collectively serve as enduring references for current and future aerospace initiatives at CSIR-NAL.



Shrinidhi Surabhi

M.Tech. (Aerospace Engineering)
Senior Scientist
Aircraft Mechanical Systems Division
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Ms. Shrinidhi Surabhi is a Senior Scientist in the Aircraft Mechanical Systems Division (AMSD) at CSIR-NAL. She holds an M.Tech. in Aerospace Engineering from the Indian Institute of Space Science and Technology (IIST), Thiruvananthapuram.

Her core research and development work is in the area of aircraft environmental and life support systems, with a strong focus on system-level design, simulation, performance analysis, and indigenization of critical aircraft systems. She has played a significant role in the development of the SARAS Mk II indigenous light transport aircraft, which is the first of its kind in Indian civil aviation. Her contributions span system-level simulation and performance analysis using Model-Based Systems Engineering (MBSE) approaches.

She was instrumental in the development of a steady-state mathematical model for Environmental Control System (ECS) packs, which has proven highly valuable for performance analysis, controller design, and enhancing in-house self-reliance for future aircraft programs. Her work on the design and development of various aircraft environmental systems, along with close interaction with multiple system developers, has strengthened both individual and team capabilities, contributing to national technological advancement.

Ms. Shrinidhi Surabhi is an approved authorized signatory and Compliance Verification Engineer (CVE) for SARAS Mk II environmental systems, including ECS, Cabin Pressure Control System (CPCS), Life Support System (LSS), Ice Protection System (IPS), and Cabin Fire Protection System (CFPS). She has been actively involved in the indigenization of aircraft systems and components, thereby reducing dependence on foreign original equipment manufacturers.

She has also contributed to the design, development, testing, and realization of an indigenous controller scheme for the SARAS Mk II ECS—an area traditionally dependent on imported solutions. Additionally, she assisted in the establishment of the Aircraft Environmental Systems Ground Test Facility (AESGTF) at CSIR-NAL for pre-installation checks and ground-level system performance testing.

She has authored three technical publications and holds three trade secrets from her previous employment.



Scientist



Prapa M

M.E. (Industrial Engg), B.E. (Aeronautical Engg)
Scientist
Quality Assurance & Airworthiness Division
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Ms. M. Prapa has 4 years of experience in Aircraft Certification and Documentation as a Scientist in Quality Assurance and Airworthiness Division (QAAD) of CSIR-NAL, Bengaluru. Her expertise is in the preparation & review of aircraft technical documentation such as Compliance Report, Technical Specification, Airworthiness Certification Plan, Aircraft manuals, etc.

She was a part of Quality Control (QC) group in QAAD and contributed towards the Type Certification of Hansa-3(NG) aircraft. Her involvement in the preparation of Production Organisation Exposition (POE) and Forms and Tags Manual for SARAS Mk II aircraft is substantial.

She is now a part of Airworthiness Group in QAAD and provides support to the aircraft certification and documentation activities. She plays a significant role in the Instrument Flight Rules (IFR) certification of Hansa-3(NG) aircraft by liaising with the Design Signatories and Regulatory authorities. She provides a major contribution in the airworthiness support towards the production series of Hansa-3 (NG) aircraft. She also supports in the preparation and review of the Technical Reports related to the design and development of SARAS Mk II aircraft.

She is certified as a Qualified Internal Auditor for AS 9100 Rev. D Quality Management Systems (QMS) of the organization.

Ms. M. Prapa was a recipient of the award "CSIR-NAL Technology Shield for Outstanding Group Achievement" for the excellent contribution to "HANSA-NG" for Design, Development, Realization, Ground Testing & Flight Testing of Hansa-3(NG) Aircraft towards Type Certification.



Principal Technical Officers



Dr. Jyotsna Kiran Mathad

Ph.D. (Polymer Science)
Principal Technical Officer
Advanced Composites Division
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Dr. Jyotsna Kiran Mathad is a Principal Technical Officer at the Advanced Composites Division (ACD), With over 25 years of experience in advanced polymeric materials and composite technologies, she has played a key role in several national, sponsored, and in-house research and development programs for next-generation aerospace platforms. Dr. Mathad earned her M.Sc. (Tech) in Polymer Science & Technology from Sri Krishnadevaraya University in 1997 with distinction, and was awarded a Ph.D. in Polymer Science by the University of Mysore in 2013. Her doctoral work involved the development of core-shell structured conducting polymer nanocomposites PPy/Fe₃O₄ for advanced aerospace applications, demonstrating multifunctional electric and magnetic properties.

Since joining CSIR-NAL in May 1999, she has contributed significantly to synthesis of intrinsically conducting polymers, development of high-temperature polymer matrices, radar-absorbing materials (RAM), EMI shielding composites, and fire-retardant coatings. Notable projects include indigenous development of radome paints, conductive polymer-based enclosures for avionics, and radar-absorbing structures for AMCA and LCA platforms. Her noteworthy achievements include "Ground integration clearance of composite chassis 8 Channel RS422 DATA Recording Unit Hardware P/N A1K-I1-1080-000-001 on LCA TEJAS PV/LSP/NP SERIES AIRCRAFT" by CEMILAC and indigenous development of 'Silicon based Intumescent Coating Si-IC' for fire protection aerospace applications meeting FAR 23 standards. She has served as Team Member, Co-Principal Investigator, and Principal Investigator in over a dozen high-impact programs such as the LCA Radome, AMCA FSS-Radome, and stealth technologies under MLP-18-03. She is presently leading the certification efforts for qualifying intumescent coatings for aerospace and naval fire protection.

Her technical contributions are supported by a strong publication record, including 9 journal papers, 20 conference presentations, 3 special publications, and over 24 project reports. She actively mentors postgraduate students and contributes to academic research guidance.

Dr. Mathad is a certified DGCA Composite Raw Material Inspector for the HANSA-3(NG) aircraft and convenor for Divisional Review Committees. In recognition of her contributions, she received the NAL Excellence Award (2015–16) for her work on lightweight conductive composite enclosures and CSIR-NAL Technology Shield in 2022 for her contribution to HANSA-3 (NG) program.



Dr. Kavitha V Rao

Ph.D. (Polymer Science)
Principal Technical Officer
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Dr. Kavitha V Rao is a Principal Technical Officer in the Advanced Composites Division. She joined CSIR-NAL in 1991 as a Junior Technical Assistant with Qualification of Diploma in chemical engineering. After joining CSIR-NAL, she pursued higher education and earned AMIE in Chemical Engineering (1999), an M.Sc. (Engg.) by Research (2008), and a Ph.D. (2020) from Visvesvaraya Technological University (VTU).

Her research mainly focuses on characterisation of polymers such as epoxy resins, cyanate esters, vinyl esters, unsaturated polyester, shape memory polymers (SMPs), and functional materials for aerospace applications. She has contributed to the characterization and development of materials for key national aerospace projects, including HANSA, LCA Mk-II Radome, Jaguar Radome, and DWR Radome. She has played critical roles in developing Shape memory polymer tooling for air intake ducts (as Team Leader), Metal Fibre Laminates (FML) such as GLARE, Shape Memory Polymers for structural applications, and Quartz Radome for AESA Radar for LCA AF Mk-II.

Dr. Rao has also developed essential facilities at CSIR-NAL, including setups for shape memory testing, dynamic mechanical analysis (DMA), and creep testing. Her materials expertise spans Tg measurement, cure kinetics, FTIR analysis, thermal degradation, gel time evaluation, and mechanical testing of polymer systems and composites. Her significant contributions have been recognized through multiple awards. Few of them are Outstanding Performance Award (1999) – HANSA Project, Outstanding Research Award (2014) – NPMAS/Shape Memory Polymer Research, Excellence in Technology Award (2016) – Lightweight Nano-composite LRU Enclosure, and Outstanding R&D Group Achievement Award (2021) – SMPs for Structural Applications. Dr. Rao has authored 50 project documents, 20 conference papers, 12 peer-reviewed publications, 1 patent, and 13 Kannada science articles, promoting science communication in the regional language.

Through her interdisciplinary expertise, hands-on R&D contributions, and leadership in material innovations, Dr. Kavitha V Rao continues to advance the field of aerospace materials and support indigenous aerospace development in India.



Dr. Padmavathi T

Ph.D. (Polymer Science)
Principal Technical Officer
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Dr. Padmavathi is a Principal Technical Officer at the CSIR–NAL with over twenty years of professional experience in polymer science and advanced aerospace composite materials. She obtained her Ph.D. in Polymer Science from Sri Krishnadevaraya University, Andhra Pradesh, in 2010, with doctoral research focused on the development of natural fiber–based composites for high-performance engineering applications. She is a Gold Medalist in M.Sc. (Polymer Science and Technology, 1994).

Dr. Padmavathi joined CSIR–NAL in August 2000 and has since been involved in research and development activities related to the tailoring of polymer matrix systems to meet application-specific aerospace requirements. Her work encompasses the development of robust processes for converting these polymer matrices into aerospace- grade prepregs, as well as the systematic optimization of composite fabrication processes for Line Replaceable Units (LRUs), aircraft engine bay doors and aircraft nose-cone radomes, addressing both structural integrity and stealth performance requirements. She has made significant contributions to several national and in-house R&D programs, including the design, development, and qualification of aircraft radomes for Jaguar, TU-142, and AMCA platforms.

Dr. Padmavathi has provided sustained technical leadership in the development, qualification and certification of advanced intumescent coating systems for fire protection and resistance applications for aircraft and naval platforms, in coordination with RCMA/CEMILAC. She has authored more than 30 internal technical reports, published 12 peer-reviewed journal articles, and delivered 22 presentations at national and international conferences. She has also actively guided postgraduate and undergraduate students. In addition, she serves as a DGCA- certified Composite Raw Material Inspector and is a member of several institutional technical and administrative committees.

Her professional contributions have been recognized through several honors, including the NAL Outstanding Award (2015–16) and the CSIR–NAL Technology Shield Award (2022) for her contributions to the HANSA-NG aircraft program. Presently, Dr. Padmavathi is leading research initiatives on multi-layer stealth structures for fifth-generation combat aircraft, encompassing the development of frequency selective surface (FSS)–based nose-cone radome technologies for the AMCA program and C-sandwich composite structural configurations for the Sukhoi-30 platform.



Padmini D

Diploma (Telecommunication Engineering), BCA
Principal Technical Officer
Acoustic Test Facility Division
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Ms. Padmini D has played an important role in the operation and maintenance of the Acoustic Test Facility at CSIR-NAL, contributing to the acoustic qualification of several major ISRO space missions such as Chandrayaan-1, Mangalyaan, INSAT and RISAT satellite series, as well as critical launch vehicle interstage structures and Reusable Launch Vehicle stages. Through her consistent involvement in conducting high-intensity acoustic qualification tests for satellites and launch vehicle subsystems, ensuring that these systems can safely withstand the extreme acoustic loads experienced during launch.

Her contributions include Leq sound pressure level analysis for LCA and HTTP flights in supporting design validation and flight readiness for ADA and HAL. She was involved in Insertion Loss characterization of ECS pipeline acoustics for LCA-ADA flights using composite and aluminium silencer prototypes, Wankel engine prototypes. Her expertise spans the determination of sound absorption coefficients, Reverberation Time and airborne sound transmission loss for aerospace as well as architectural applications. Ms. Padmini has carried out noise measurements for firecrackers, home appliances and industrial equipment, which help in checking safety limits, verifying compliance with noise standards, and improving product performance. She also provides calibration services for acoustic sensors to various external agencies, ensuring accurate and reliable noise measurements. She has contributed to sound power estimation of noise sources using standardised measurement techniques.

Her contributions to the development of high-intensity acoustic calibrators and multi-frequency multi-level noise generators used in spacecraft and launch vehicle subsystem testing.

She has participated in DFAT-based honeycomb panel characterization, dynamic characterization of PVDF sensors and acoustic fatigue testing of military-grade equipment electronics in T-90 tanks. Her achievements include receiving the CSIR National Award in Kannada titled -An overview of the challenges and failures in Acoustic environmental tests on spacecraft and launch vehicle subsystems.

She has presented several papers at national conferences on spacecraft acoustics, vibro-acoustic responses, sound power estimation, exponential horn effects, and random acoustic loading. Her research interests include vibro-acoustics, noise control, environmental acoustics, acoustic sensors, and aerospace-grade calibrators. She is also a Life Member of the Acoustical Society of India (ASI) and a co-author of a national journal publication.



Poornima N

B.E. (Electronics & Communication)
Principal Technical officer
Propulsion Division
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Ms. Poornima N has contributed to projects sponsored by various government organizations like GTRE, ADA, DRDO and BHEL. She is Involved in the testing of heat exchangers for LCA Tejas and AMCA aircraft programs. She has developed data acquisition system for the performance testing of fuel cooled oil cooler heat exchanger which is being indigenously developed by ADA for the advanced medium combat aircraft program.

Ms. Poornima has also developed the data acquisition system for the performance testing of Air to Liquid heat exchangers, indigenously designed and developed by DARE-DRDO for the electronics cooling application. In this work, four heat exchangers are tested for thermal performance and pressure drop test and the heat exchanger's effectiveness is calculated based on each fluid's inlet and outlet temperatures.

Ms. Poornima's work also contributed to the data acquisition system development for the lab level testing of SARAS Air cooled oil cooler heat exchanger. She is involved in the testing of High Oxidative Thermally Stable (HOTS) oil indigenously developed by GTRE for using it as lubricant in small gas turbine engines. It was tested at the Bearings test facility of CSIR-NAL for speeds upto 45000 rpm with maximum oil temperature of 230 deg C at specified loading conditions. Her work also includes 2D cascade tests of typical small gas turbine engine for GTRE and various other projects sponsored by private organizations like TVS motor company, Honeywell Technology Solutions and others. She has around 4 publications.



Radha B R

M.Tech. (Metallurgical & Materials Engineering)
Principal Technical Officer
Aircraft Prototype Manufacturing Facility
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Ms. Radha serves as a Principal Technical Officer in the Aircraft Prototype Manufacturing Facility (APMF) at CSIR-NAL. She holds M.Tech in Computer Integrated Manufacturing, a qualification that has strengthened her technical foundation in advanced manufacturing a precision engineering. She joined CSIR-NAL on 06 November 2002 as Technical Officer, marking the beginning of a distinguished career spanning over two decades.

Ms. Radha began her professional journey in the Metrology Laboratory at APMF, where she undertook comprehensive responsibilities in dimensional inspection of aircraft components. Her work has involved the proficient use of handheld measuring instruments, roundness testers, contour and surface roughness testers, Coordinate Measuring Machines (CMM), laser trackers, and Universal Length Measurement (ULM) systems. She has also overseen calibration activities for machine tools and handheld instruments, ensuring accuracy and compliance with stringent aerospace requirements. As a DGCA- and DGAQA-approved inspector, she has played a crucial role in the inspection and certification of aircraft components.

Currently, Ms. Radha heads Metrology & Calibration Laboratory and the Non-Destructive Testing (NDT) Facility at APMF. Under her leadership, the Calibration Lab maintains accreditation from NABL in accordance with ISO/IEC 17025 standards. She also serves as the Divisional Representative for AS 9100 certification activities, contributing to quality management and regulatory compliance within the division.

Over the years, Ms. Radha has been recognized with several prestigious awards. These include the Excellence Team Award (2014–15) for Profile Mapping and Ground Vibration Testing of the Searcher Remotely Piloted Aircraft, and multiple NAL Technology Shields for outstanding group achievements related to Carriage and Handling Studies for the Mirage 2000 Upgrade (2018–19 and 2020). She also contributed to the composite technology commercialization efforts that earned CSIR-NAL the Technology Award for Business Development and Technology Marketing in 2020. Additionally, she received recognition on 26th January 2021 for exemplary service during the COVID-19 pandemic and nationwide lockdown.



Rajeshwari Natarajan

Diploma (Instrument Technology)
Principal Technical Officer
Propulsion Division
E-mail : rn.nal@csir.res.in



Ms. Rajeshwari Natarajan works in the area of High-speed turbomachinery instrumentation, combustion research and robust data acquisition development. She has contributed significantly in the domains of instrumentation, measurement systems, and data acquisition technologies, with applications in Turbomachinery and Combustion Research & Development, where she has specialized in instrumentation for axial-flow and centrifugal compressor test facilities; Combustor Design and Testing wherein she has provided support in the design, development, and testing of reverse-flow and annular combustors; Engine Test Facility Establishment where she has played a key role in setting up engine test facilities for JT15D and TS21 engines; Thermal Insulation Paint Certification, where she has contributed to the certification of indigenously developed thermal insulation paints using combustion test facilities.

She has received the CSIR-NAL Outstanding team performance award for the work on “Indigenous development, testing and pre-production clearance (from CEMILAC) of thermal insulation paint for Heat Shielding application on SARAS Aircraft” for the year 2023-2024.

She has co-authored around 10 conference papers.



Revathi A

M.Sc. (Engg.)
Principal Technical Officer
Advanced Composites Division
E-mail : revs.nal@csir.res.in



Ms. Revathi is a Principal Technical Officer in the Advanced Composites Division. She holds an M.Sc. (Engg.) and has over two decades of experience in advanced composite materials, radome technologies, and stealth systems for aerospace and defense applications.

Her research focuses on polymer matrix composites, shape memory polymers (SMPs), stealth materials, and nanocomposites including MWCNT and graphene-based systems. She has made significant contributions to several national-level projects. Few of them include qualification and certification of radomes for TU-142 and Jaguar aircraft, environmental testing of composite materials for HANSA and HAPS programs, design and development of radomes for AMCA and LCA AF Mk2 (Quartz Radome for AESA radar), development of CNT-based conductive CFRP composites for EMI shielding, indigenous development of high-temperature BMI composites for aerospace, and contributions to stealth coatings and mechanical/environmental testing of radar-absorbing materials.

As part of CSIR's indigenous technology drive, she also played a key role in developing shape memory polymer tooling for military aircraft, earning widespread recognition. She has helped establish critical test facilities at CSIR-NAL. Few of them are climatic chambers (temperature, humidity), thermal shock chamber, salt spray chamber, and UV chambers. Her work has resulted in 18 international publications and one granted patent (2018) on "A process for obtaining recoverable deformations in SMPs".

Ms. Revathi's work has been recognized through several awards and appreciations. Few of them are CSIR-NAL Technology Shield for Outstanding Group Achievement (2022) – HANSA-NG, Best Innovation Award (2020–21) – SMP Tooling (Team), Outstanding Performance Award (2016) – SMP Materials (Team), Outstanding Performance Award (2013–14) – EMI Shielding (Team), Best Paper Awards – International Conferences (2016 & 2017), and Certificate of Appreciation for reviewing journal articles for the Institution of Engineers.

Through her sustained technical leadership and innovation, Ms. Revathi has played a vital role in advanced composite technologies for India's aerospace sector.



Roopa H N

Diploma (Ceramic Technology)
Principal Technical Officer
Materials Science Division
E-mail : roopa@nal.res.in



Ms. Roopa joined CSIR-NAL in January 1993 as Junior Technical Assistance in Materials Science Division under Dr T S Kannan. She has conducted detailed literature survey on SiC material in order to work on afterburner catalyst cup. She has worked on plaster of paris for preparation of moulds for slip casting, slurry preparation, characterization like particle size analysis, zeta potential, viscosity and study sample preparation. She has been also involved in density/porosity measurement, 3-point bending test, hydroxyapatite slurry preparation and characterisation, porous ceramics with alumina, and 3D printing with hydroxyapatite and alumina slurry.

She has been also working on environmental barrier coating for C-SiC composites, fibre stitching with 2D, 2.5D, interface coating, log book maintenance, loading/unloading of reactor and assistance during maintenance work for the CVI reactor. Ms Roopa has been involved in the characterisation for Cf - SiC composite samples like density, porous tensile, IILS, thermal cycling, TGA, initial studies and resin preparation for hybrid process (CVI+LSI) work. She is presently working as Principal Technical Officer and involved in various sponsored projects for DMRL, BARC, AZISTA and CSIR-NAL. She has been working on fence plate, cowl plate, nose tip basic characterisation studies for BARC, and brake disc for CSIR-NAL. She is also involved in the maintenance of ISO records.



Shobha D

Diploma (Computer Science & Engineering)
Principal Technical Officer
Computational & Theoretical Fluid Dynamics Division
E-mail : sobhadurai.nal@csir.res.in



Ms. D. Shobha has over 31 years of experience in maintaining the computing facilities of the Computational and Theoretical Fluid Dynamics (CTFD) division which mainly concerns the development of Computational Fluid Dynamics (CFD) codes and their application to aerospace design for CSIR-NAL's civil aircraft programmes and similar projects of other organizations. These activities are highly compute intensive – as the basic infrastructure is built around high compute servers supported by a number of high end workstations and front-end PCs - this requires the computational facilities to be up and functional all the time.

Ms. D. Shobha has been able to assist the CTFD Division mainly in Maintenance of Divisional Computing Facilities which includes OS installation/upgradation on MS-Windows and Linux platforms, installation & maintenance of Reprise License Manager (RLM) and Flexnet License Manager for licensed software servers and periodic licensed software upgrades, maintenance of networked attached storage system[NAS], workstations, PCs, laptops, network connectivity, email configurations and other software packages to ensure trouble-free operations. Periodically organizing Licensed Software trainings for the Divisional Scientists.

Apart from the above activities – Mrs. Shobha has contributed technical and general support by handling of purchase procedures relating to the Computing Facility like procurement of high end workstations and other consumable items, GeM purchase indents and GeM non-availability reports, assistance rendered in preparation of divisional, LAB annual reports and in preparing the general budget allocation for the Division. Support rendered for various Seminars/Conferences and for the 14thACFD Conference held at HMA, Bangalore during 30th Oct – 2nd Nov/2023 assisted in handling large volumes of conference emails and in preparing the conference proceedings. Mrs. Shobha is also serving as a Discipline Coordinator for Store-Purchase Inventory, Divisional Computer Management Committee Member, Divisional Member – Disaster Management Cell and Served as a Ladies Representative for CSIR-NAL -Kannada Samskruthika Sangha.

Ms. Shobha was a recipient of the prestigious Outstanding Performance Awards of CSIR-NAL in Technical Support for “Excellent organizational support & DTP effort for the entire publications / reports – formatting of the Proceedings of 14th International Conference on Numerical Methods in Fluid Dynamics (ICNMF), 11 June 1996.



Shrilatha Acharya

M.S. (e-Commerce)
Principal Technical Officer
Aerospace Electronics & Systems Division
E-mail : shrilatha.nal@csir.res.in



Ms. Acharya is an experienced professional in the design and development of safety-critical embedded software, with extensive expertise in compliance with RTCA DO-178C, DO-331, and DO-330 standards. She is competent in developing applications for ARINC 653-compliant platforms, ensuring deterministic behavior and robust partitioning for avionics systems.

She has strong proficiency in core heterogeneous network and server management, along with the design and implementation of cybersecurity applications. In addition, she has significant experience in the design and development of Product Lifecycle Management (PLM) software for civil aviation programs, supporting end-to-end traceability and lifecycle management of complex aerospace systems.

Currently, her work is focused on the development of ARINC 653-compliant kernels, hypervisor development for multicore embedded systems, and advanced real-time operating systems (RTOS), contributing toward next-generation, high-assurance avionics platforms.



Senior Technical Officers



Bhagya Rekha K A

B.S. (Information Systems)
Senior Technical Officer - 3
Information Centre for Aerospace Science & Technology
E-mail : dbrekha.nal@csir.res.in



Ms. Bhagya Rekha heads the Reader's Services Group, where she plays a pivotal role in managing and enhancing a wide spectrum of library and user-support functions. In her capacity as Group Head – Reader's Services, she oversees membership and circulation operations, ensuring efficient onboarding of staff, Junior Research Fellows, and AcSIR scholars. Her responsibilities include maintaining membership records and control cards, as well as managing day-to-day circulation activities such as issuing, returning, renewing, and recalling documents. She also administers overdue alerts, issues "No Due Certificates," and conducts periodic analysis of circulation statistics to support data-driven decision-making and service improvement.

She manages institutional membership processes by coordinating enrolments, maintaining comprehensive membership databases, handling annual renewals, facilitating payment procedures, and issuing borrower tickets to partner institutions. Her role extends to front-line user services, where she responds to queries related to ICAST resources, assists researchers in accessing digital collections, and contributes to improving user interfaces for the online catalogue and databases. As a liaison between the library and its users, she ensures effective engagement with both digital and print resources.

She leads the systematic weeding of obsolete materials in collaboration with the designated Sub-Committee, ensuring the responsible disposal of outdated books, reports, and student projects. She also supports the Institutional Repository by aggregating, uploading, and moderating NAL publications and project documents to maintain quality and accessibility standards. Her responsibilities include space management within the library, including reorganizing collections, creating space for new acquisitions, and overseeing the disposal of unused equipment and furniture. Through inter-library loan services, she coordinates with institutions such as IISc, HAL, ISRO, and DRDO to broaden access to information resources.

Additionally, she offers reference and retrieval support, guiding users in the use of e-resources, OPAC, and the Institutional Repository, while ensuring accurate shelving and classification. She is a recipient of the Team Award for Outstanding Performance in Technical Support for the creation of the ICAST Website and Database, conferred on CSIR - NAL Foundation Day, August 18, 1999.



Jyothi R

B.Sc. (Computer Science)
Senior Technical Officer - 2
Project & Business Management Directorate
E-mail : jyothigururaj.nal@csir.res.in



With a strong foundation in project coordination and scientific administration, Ms. Jyothi has played a vital role in managing and monitoring high-value research and technology development initiatives within the Materials Science and Technology Cluster.

Her work spans the complete lifecycle of scientific projects—from proposal evaluation and budget assessment to implementation monitoring, documentation, and final closure. By ensuring adherence to CSIR's financial, administrative, and procedural guidelines, she has contributed significantly to the smooth and effective execution of multiple strategic programs. Her efforts directly support CSIR-NAL's mission to advance research, foster innovation, and strengthen collaboration with national agencies and industry partners.

Among her notable contributions, Jyothi has provided comprehensive project-monitoring support for the prestigious BARC-sponsored initiative "Expert and Technology Know-how Support for Developing High-Performance Carbon Fiber and Setting Up a 50 TPA Carbon Fiber Facility", a major ₹17-crore program aimed at enhancing India's indigenous carbon fiber capabilities. She also played a key role in overseeing the DMRL-funded "Realization of C-SiC Components Through CVI Process" project, valued at ₹8.98 crore, ensuring timely progress reporting and goal alignment.

Additionally, she contributed to the ADA-funded major project on "Zn-Ni Plating Component Level Process Development." Through coordination with multiple stakeholders—including RCMA-CEMILAC, DGAQA, QA-SEG, ADA, and QC-ACD at CSIR-NAL—she supported successful type testing and the achievement of type approval for LCA components and test coupons. Jyothi is also actively involved in monitoring the National Technical Textile Mission (NTTM) project "Development of Intermediate Modulus Grade Carbon Fibers" undertaken by CCFP. Beyond project management, she provides continuous support to Failure Analysis and Accident Investigation activities, a critical function of the Materials Science Division.

In recognition of her dedication, precision, and consistent performance, she was honored with the CSIR-NAL Outstanding Performance Award for 2024–25. Through her diligent contributions, Ms. R. Jyothi continues to strengthen the efficiency, accountability, and success of mission-critical projects at CSIR-NAL.



Kalavathi

B.E. (Instrumentation Technology)
Senior Technical Officer - 3
Materials Science Division
E-mail : kalavati@nal.res.in



Ms. Kalavathi joined CSIR-NAL on 23-07-1999 as a Technical Assistant. She started her career at Scanning Electron Microscopy and later worked for six years in the X-Ray diffraction lab of MSD, CSIR-NAL.

Her lab responsibilities include characterizing various materials for projects at CSIR-NAL and outside organizations. She was a Divisional Representative for the implementation of the official language for more than 10 years.

She has been a Divisional Representative for GeM certification activities. Her publications include 6 journal papers and 16 conference papers. She has received 11 best paper awards.



Kowsalya Devi M B

B.E. (Computer Science & Engineering)
Senior Technical Officer
Information & Communication Technology Division
E-mail : kowsalya.nal@csir.res.in



With over twenty years of dedicated experience in software design, development, and implementation. Ms. Kowsalya Devi has played a key role in creating and maintaining robust enterprise and healthcare applications that support vital administrative and operational functions at CSIR-NAL laboratories.

Her technical expertise includes Java, J2EE, JavaScript, Angular, Spring Boot, and enterprise databases such as Oracle and MS SQL Server. This is complemented by her strong skills in software development, testing, deployment, and end-user support.

Ms. Kowsalya Devi has significantly contributed to ACCESS (Application for Comprehensive CSIR Enterprise for Stores & Supplies), a flagship web-based system of CSIR Headquarters and CSIR-NAL. The system automates the entire lifecycle of stores and purchase activities.

She has also played a key role in developing Arogya, a comprehensive Health Care Management System for CSIR dispensaries. This application optimises medicine inventory management, employee health records, and patient visit workflows, ensuring accurate tracking from registration to medicine dispensing. Its scalable design has allowed adoption across multiple CSIR laboratories.

As a Tiger Team member for ERP – OneCSIR (Stores & Purchase Module), she contributed to the successful implementation and stabilisation of organisation-wide ERP processes. Her work also includes designing and supporting NAL Stores Inventory Management Systems, such as Stock Inventory, Abstract Asset Register, and Cash Purchase Register, which enhance materials management and reporting capabilities.

Furthermore, Ms Kowsalya Devi has been involved in various administrative and digital transformation projects, including online recruitment and screening systems, temporary staff salary processing, and digitisation platforms such as WebISTAD for deputation abroad. These initiatives promote greater efficiency, transparency, and automation within the organisation.



Latha S

M.Tech.(DC), B.E.(Electronics & Communication)
Senior Technical Officer - 3
Surface Engineering Division
E-mail : lathas.nal@csir.res.in



Ms. Latha S, has over 25 years of experience in Research and Development as a Technical Officer in the Surface Engineering Division of CSIR–National Aerospace Laboratories (CSIR-NAL), Bangalore. Her expertise lies in the surface modification of diverse substrates, development of nanocomposites, electrodeposited coatings, plasma nitriding for enhancing wear and corrosion resistance, and advanced surface characterization techniques including optical microscopy, Micro-Raman spectroscopy, and X-ray photoelectron spectroscopy. She has contributed significantly to the development of a plasma nitriding process aimed at improving the service life of ITC rollers with knurlings.

Her research contributions have resulted in nearly 11 publications in peer-reviewed international journals and the grant of one Indian patent titled “Volcanic Rock Particles Reinforced Metal Matrix Composite Coating” (July 2013). She is currently working on the development of a MEMS-based pressure sensor for aerospace applications, with a focus on sensor design, packaging, and performance optimization, particularly involving oil-filled isolated pressure sensing systems for reliable operation in demanding environments such as wind tunnel testing.

In recognition of her contributions, she was a recipient of the Outstanding Team Performance Award by the parent organization.



Mahadevi B Patil

M.Tech. (Civil Engineering – Construction Technology)
Senior Technical Officer - 1
Estate & Building Unit
E-mail : mbpatil.nal@csir.res.in



Ms. Mahadevi B. Patil is a civil engineering professional associated with CSIR-NAL, Bengaluru. She holds a Master of Technology (M.Tech.) degree in Civil Engineering with specialization in Constructional Technology, awarded by Visvesvaraya Technological University (VTU). Her professional interests broadly include infrastructure development, construction management, estimation, tendering, and maintenance of institutional facilities.

At CSIR-NAL, Ms. Patil is actively involved in the planning, execution, supervision, and maintenance of civil engineering works, encompassing both major and minor projects. Her responsibilities include interacting with divisional users to assess site requirements, preparing preliminary and detailed cost estimates, and generating drawings using AutoCAD. She prepares detailed estimates in Excel and abstract sheets using ESTA software, and processes proposals through administrative and finance channels for approval by competent authorities.

She plays a key role in the e-tendering process, including preparation of tender documents, bills of quantities, justification statements, comparative statements, and coordination with finance and accounts departments. Following award of work, she is responsible for supervising execution as per specifications, recording measurements in Measurement Books, and preparing running account bills, deviation statements, revised estimates, and memoranda of payments.

Ms. Patil also manages Annual Maintenance Contracts (AMC) for laboratory premises, which involve upkeep and maintenance activities through online service requests, work allotment, supervision, evaluation, and billing. In addition to her technical responsibilities, she serves as a convener/member on several institutional committees, including the Works and Services Committee (EBU), Technical Tender Evaluation Committee (TEC), Canteen Welfare Committee. She had also contributed significantly in the past as member of CSIR-NAL's Quarters Welfare Committee. In recognition of her contributions, Ms. Patil received the "Excellence Award in the Field of Infrastructure Support Services" from CSIR-NAL in 2019 for her role in the extension and modification of the Reception and Security Building at Kodihalli.



Dr. Malavika M S

M.B.B.S

Lady Medical Officer/Senior Technical Officer - 2
Health Centre

E-mail : mala@nal.res.in



Dr. Malavika M. S. is a dedicated medical professional with over nine years of clinical and institutional service, currently serving as Lady Medical Officer at CSIR–NAL since 2018. With strong experience in hospital medicine, public health services, and occupational healthcare, she has consistently contributed to employee well-being, emergency care, and administrative efficiency within the organization. Her commitment to service, even during challenging periods such as the COVID-19 pandemic, reflects her resilience, compassion, and professionalism.

As a Lady Medical Officer – CSIR–National Aerospace Laboratories (2018 – Present), she provides comprehensive medical care to employees, pensioners, and their dependents. She manages outpatient services and supports continuity of care for chronic and acute medical conditions. She is Actively involved in administrative operations of the Health Centre, ensuring smooth service delivery and coordination. She attends to in-house medical emergencies during working hours, ensuring prompt and effective response. She has played a vital role in maintaining uninterrupted medical services during the COVID-19 pandemic, serving diligently despite personal responsibilities as a young mother. As a Medical Officer – NUHM (National Urban Health Mission) she has delivered primary healthcare services to the urban population and participated in public health initiatives, preventive care, and community outreach. Clinical Experience – At Manipal Hospital (1.5 years) she has gained hands-on experience in hospital-based patient care, emergency management, and multidisciplinary coordination.

She provides continuous medical support to a large employee and pensioner population with emphasis on quality care and accessibility. and strengthens administrative workflow at the Health Centre through coordination and operational support. She ensures availability of medical services during critical periods including the COVID pandemic. She is actively involved as a member of the NAL Vidyodaya School Committee, contributing to infrastructure improvements and initiatives aimed at enhancing educational quality and student facilities. She also supports institutional welfare beyond healthcare through engagement in developmental activities.

She has compassionate and patient-centered approach. She has strong sense of responsibility and dedication, ability to balance professional excellence with personal commitments. She has team-oriented and service-driven mindset.



Navaneetha S

DCS & E
Senior Technical Officer
Aerospace Electronics & Systems Division
E-mail : navi.nal@csir.res.in



During the initial years of her career, Ms. Navaneetha was actively involved in the preparation of acceptance test documents, quality test plans, and process control procedures for the Hansa-3 pre-production series, Jaguar radomes (HAL), and DWR radome (ISTRAC-ISRO) at the FRP Division. She was a team member involved in the testing of electrical and instrumentation panels of large autoclaves developed for ASL-Hyderabad and VSSC-Thiruvananthapuram, as well as a lab-scale autoclave for IIT-Kanpur and MIT-Manipal.

She has also successfully carried out maintenance of the Reaves autoclave chamber at VSSC, Thiruvananthapuram, and was involved in the preparation of software installation, operation, and autoclave cure control software manuals. As part of the NPMAS project, she contributed to the integration and testing of micro aerial vehicles with smart material actuators. She has made significant contributions toward the installation of LRUs, testing, and execution of duties as an inspector, including functional testing of all avionics parameters in the presence of DGAQA, leading to the qualification of the avionics system for the SARAS PT1N aircraft. She also participated in clearing the aircraft through daily inspections for engine ground runs (EGRs), low-speed and high-speed taxi trials, and multiple flight trials. In parallel, as an avionics inspector, she carried out inspection and clearance activities for cable harness testing, installation, and functionality testing in the presence of DGCA representatives for all avionics parameters of the Hansa-3 HOH aircraft and Hansa-3 NG (VT-HNG) aircraft.

Currently, she is involved in SARAS Mk II aircraft activities, including identification of all switches and potentiometers for the aircraft, and serves as an inspector for clearing the Avionics Integrated Test Rig for the SARAS Mk II aircraft. She is also associated with the Hansa-3 NG projects, contributing to the clearance of production series aircraft (MSN-15) through functionality testing and the clearance of the VT-HNG aircraft for IFR certification. She has to her credit two international journal publications, six conference papers, several internal project documents, and multiple SARAS and HANSA project-related test reports. As a lead auditor for the AS 9100 Rev. D certification system, she has conducted several laboratory audits within CSIR-NAL. She has also been instrumental in successfully organizing several national conferences and has served as a member of organizing and technical committees



Pratibha Rajashekhar Kumbar

B.Sc., MLISc
Senior Technical Officer - 1
Information Centre for Aerospace Science & Technology
E-mail : pratibhask.nal@csir.res.in



Ms. Pratibha Rajashekhar Kumbar, MLISc, serves as Senior Technical Officer–1 at the Information Centre for Aerospace Science and Technology (ICAST), CSIR–NAL. She contributes extensively to the management of journals, digital resources, and web-based information services, which play a pivotal role in supporting the research and knowledge ecosystem of the institution.

In the area of Journal Acquisition and Resource Management, Ms. Kumbar assists in budget planning for journal subscriptions by analyzing usage statistics and aligning procurement with project and institutional requirements. She supports subscription renewals through detailed evaluations of e-resource usage data, ensuring that acquisitions remain both cost-effective and relevant. She manages the registration of print journal issues in the integrated library system (Libsys) and ensures the integrity of bibliographic information through regular database validation and updates. Her role also involves coordinating with publishers and vendors to resolve missing-issue queries and conducting routine link checks to ensure uninterrupted access to e-resources.

Her contributions to Web-Based Information Services include significant involvement in institutional knowledge archiving and digital content management. She identifies, deposits, and moderates scholarly publications authored by CSIR–NAL researchers in the NAL Institutional Repository (NAL-IR). She supports research teams by locating and downloading technical aerospace reports relevant to CSIR–NAL projects and participates in digitizing legacy institutional collections and project documents. She regularly updates the ICAST web portal with recent publications, newly added books, and works authored by CSIR–NAL scientists, thereby strengthening internal and external knowledge dissemination. Ms. Kumbar also provides specialized literature search services using global citation databases such as Web of Science and Scopus, and leverages open-access platforms like BASE to broaden access to scholarly resources. She compiles and manages publication metrics essential for assessing institutional research output, contributing analytical insights that support reporting, strategic decision-making, and research assessment.

She has presented her work at professional forums, including the 4th LIS Academy Conference (LISACON-2021), where she delivered the paper "Openness of Aerospace Scholarly Literature through Open Access Channels: A Comparative Study." Her contributions reflect a sustained commitment to enhancing information access, research support, and digital knowledge management at CSIR–NAL.



Rekha S M

B.Sc. (Electronic Science), MS in DD & ES
Senior Technical Officer - 1
Structural Technological Division
E-mail : rekhamudalagiri@nal.res.in



Ms. Rekha has Majorly Contributed to Operation and Maintenance of Acoustic Test Facility. Contributed to Leq Sound Pressure Analysis of LCA and HTTP Flight Data for ADA and HAL clients. Insertion Loss characterization of Composite/Aluminum pipeline of ECS of LCA. Calibration support/Noise Measurements for External Agencies. Testing/Validation support for ISITE-ATF at ISRO organization. Acoustic tests on Chandrayaan-1, Mangalyaan, INSAT, RISAT series, various Launch vehicle interstages, HSP stages. Dynamic Characterization of PVDF sensors - MS Division, NAL. Insertion loss study on Wankel engine prototype silencer. Determination of sound absorption coefficient, Reverberation time and Airborne Sound Transmission Loss of aerospace and building applications. Characterization of Honeycomb panels using DFAT Method. Acoustic Fatigue test to qualify T90 battle tank electronic equipment OPLF, Dehradun.

She has received Best Paper Presenter Award in National conference in Science & Technologies in Aerospace & Defense sectors in Kannada-Nov 2024, Paper titled "An overview of the challenges and failures in Acoustic environmental test on spacecraft and launch vehicle subsystems".

She has presented several papers such as Study of influence of natural frequency of typical aluminium panel on vibration response when subjected to random acoustic load-CSIR-NIO-GOA 2015. Comparison of sound power of noise source using sound pressure and sound intensity measurement Techniques-CSIR-NIO-GOA-2015. Qualification tests on spacecraft and launch vehicle subsystems for acoustic environment-VSSC ISRO, TRIVANDRUM-2019. A Journey to the Space-CSIR-NAL-2020. Effects of Exponential Horns in simulating Noise spectrum in Reverberant Acoustic Test Facility-NSTL-Vishakhapatnam-2024. An overview of the challenges and failures in Acoustic environmental test on spacecraft and launch vehicle subsystems-CSIR-NAL-2024.



Sangeetha A L

BCA

Senior Technical Officer - 2 / Public Relations Officer

Director's Technical Secretariat

E-mail : sangeetha.nal@csir.res.in



Ms. Sangeetha A. L., B.C.A., serves as Senior Technical Officer-I and Public Relations Officer (PRO) in the Director's Technical Secretariat at CSIR-NAL, Bengaluru. In this capacity, she has played a pivotal role in shaping the organization's public image, strengthening stakeholder engagement, and amplifying the institute's national visibility.

In her strategic outreach role, she has contributed significantly to the planning and execution of high-impact national initiatives such as One Week One Lab, One Week One Theme, and major aerospace events including Aero India and Wings India. She has coordinated dignitary visits involving the Hon'ble Vice President of India, Hon'ble Minister for Science & Technology, Hon'ble Minister for Civil Aviation and other senior officials from the Ministries. Her efforts ensured seamless event management, cohesive messaging, and enhanced institutional outreach. Ms. Sangeetha has also been instrumental in driving CSIR-NAL's digital communication strategy. By curating a structured social media content calendar and developing high-quality visual narratives across platforms such as Twitter, Facebook, YouTube, and Instagram, she helped achieve huge increase in follower engagement. This digital amplification strengthened CSIR-NAL's brand identity and broadened public engagement during major scientific events and announcements. Her contributions extend to academic engagement, where she streamlined the institute's internship and project intake process, enabling students to work on live research initiatives. She has facilitated mentorship avenues with scientists, organized lab tours, coordinated guest lectures, and strengthened collaborations with universities. As Co-Nodal for JIGYASA, she has actively promoted STEM outreach, fostering student-scientist interactions and inspiring young minds to pursue careers in science and technology.

Across her tenure, her key contributions include strengthening national visibility, fostering community and academic engagement, advancing digital communication, and enhancing CSIR-NAL's institutional reputation. Her work aligns closely with the organization's mission of promoting scientific innovation and public awareness in aerospace research.

Ms. Sangeetha's excellence has been recognized through several institutional honours: the Special Award for Event Management during CSIR-NAL's Golden Jubilee Celebrations (2009), the Group Achievement Award (2022), and the Excellence Award for Public Relations Activities (2022). Through her multifaceted contributions, she continues to be a driving force in elevating CSIR-NAL's public outreach, strategic communication, and science engagement initiatives.



Sravani Tungala

B.Tech. (Computer Science and Engineering)
Senior Technical Officer - 2
Information & Communication Technology Division
E-mail : sravani.nal@csir.res.in



Ms. Sravani Tungala is a Senior Technical Officer at the Information and Communication Technology (ICT) Division of CSIR-NAL, Bengaluru, where she has been serving since 2018. With over sixteen years of professional experience in Information Technology, including eight years before joining CSIR-NAL, she possesses strong expertise in the design, development and deployment of enterprise-level web applications and digital transformation initiatives.

At CSIR-NAL, Ms. Sravani Tungala has actively contributed to the organisation's paperless and e-governance initiatives by conceptualising and implementing multiple web-based enterprise systems that streamline administrative, technical and operational workflows across divisions.

She played a key role in the design and development of the Project Finance Management System (PFMS) and SARAS Finance Management System(SFMS), which enables comprehensive financial oversight of projects benefiting Project Leaders, Project monitoring group and Administration, Finance & Purchase sections.

Ms. Sravani Tungala has implemented several other critical systems, including the Online Material Movement System for tracking returnable and non-returnable materials, the Online Complaint System, which streamlines service requests and the APMF Web Portal, an end-to-end job card management system. She also designed and implemented the Student Management System, facilitating complete lifecycle tracking of interns and project students trained by Scientists and Technical Officers.

Her contributions extend to the development of Tool Management and Stores Management Systems for Production units like ACD and APMF divisions, ensuring efficient handling of inward and outward movement of tools and inventory. Additionally, she has developed specialised web portals supporting HANSA-NG aircraft production and ASPIRE (AS9100D AQM & DQM), which strengthen quality assurance and production processes.

Through her sustained contributions, Ms. Sravani Tungala has played a significant role in advancing digital transformation, operational efficiency, and system automation at CSIR-NAL.



Sudha V

Diploma (Electronics & Communication Engg.)
Senior Technical Officer - 1
Structural Technological Division
E-mail : sudhavalliappan.nal@csir.res.in



Ms. Sudha possesses more than 15 years of experience in electronics instrumentation and testing across various test vehicles within the Structural Technological Division of CSIR-NAL, Bengaluru. Her specialization lies in the instrumentation of sensors such as strain gauges, PZT's (Patches/Stack), accelerometers, and actuators utilized in diverse test vehicles including the L40 Deck plate, active engine mount system, MAV, HANSA, HAPs, GSLV MK II, and Gaganyaan.

She actively participates in model instrumentation, ground vibration testing, aero-elastic testing, and wind tunnel testing. Her proficiency encompasses the instrumentation of various modules that integrate different sensors into the data acquisition system (DAS) necessary for testing, as well as the preparation of looms, routing, wiring harnesses, and sensor calibration. Additionally, she has provided technical support to research scholars (Ph.D. students) in conducting experiments for their project work in the laboratory. Ms. Sudha has made significant contributions to the esteemed National Program GSLV MK-III, Gaganyaan, and its test vehicle configurations, which were executed by the Human Space Flight Centre, ISRO.

She has also been involved in ground vibration testing on the Jaguar aircraft and in the flight instrumentation and testing of the DOS 30, Mirage 2000, and SU-30 MKI aircraft.

Ms. Sudha was honored with the CSIR-NAL Outstanding Performance Award for her "Excellence in Design, Development & Project Execution" for "A Novel Vibration Control Technology using Electromechanical Actuators under Simulated Aircraft Power Environment with In-Flight Electronics," as well as the CSIR-NAL Technology Award for her exceptional contributions to HANSA-NG in the design, development, realization, ground testing, and flight testing of the HANSA-3 (NG) aircraft towards type certification.



Dr. Swetha C Desai

M.B.B.S
Chief Medical Officer
Health Centre
E-mail : scdesai.nal@csir.res.in



Dr. Swetha C. Desai joined CSIR-NAL in 2009 and is presently serving as the Chief Medical Officer (CMO) at the Health Centre of CSIR-NAL, Bengaluru. In her capacity as CMO, Dr. Desai is responsible for providing comprehensive primary and occupational healthcare services to CSIR-NAL employees, pensioners, and their dependent family members. She oversees the clinical and administrative functioning of CSIR-NAL Health Centre, including outpatient care, physiotherapy services, emergency medical support, preventive healthcare initiatives, health surveillance, maintenance of medical records, and coordination with referral hospitals, thereby ensuring the overall wellbeing of the laboratory's scientific, technical, and administrative workforce. She played a key role in the administration of revised medical guidelines and the empanelment of recognized hospitals (such as Manipal Hospital) under CGHS rates for the CSIR-NAL community. As a part of the institutional administration, she contributes to health-related policy implementation and compliance with government medical guidelines applicable to autonomous research organizations.

She has also played an important statutory and welfare role within CSIR-NAL as a members of various Internal Committees, reflecting her involvement in organizational governance and employee welfare mechanisms. Her engagement extends to institutional community activities, including interactions with pensioners and participation in their welfare-oriented programs. Dr. Desai has played a pivotal role in conducting the check up of CSIR-NAL employees under the Phenome India-CSIR Health Cohort Knowledgebase (PI-CHeCK) Project of CSIR at Health Centre, CSIR-NAL. The PI-CHeCK project focuses on identifying India specific risk factors for cardiometabolic diseases. Through her professional focus on clinical care, preventive medicine, and medical administration within a high-technology research environment, Dr. Desai supports the mission of CSIR-NAL by promoting a healthy and productive workplace.



Technical Officers



Akhila S Koushik

B.E. (Electronics & Communication)
Technical Officer
Aerospace Electronics & Systems Division
E-mail : akhila1002.nal@csir.res.in



Ms. Akhila is a Technical Officer in the Aerospace Electronics & Systems Division (ALD) at CSIR–NAL, Bengaluru, with over 7 years of experience in Aerospace research support and laboratory infrastructure.

Her primary work includes the Design, Development, Installation, Commissioning, Testing, and Maintenance of PLC-based control software and HMI systems for composite processing equipment such as Desktop Autoclaves, Multi-zone and Dual-zone Hot Bonders, Hybrid Autoclaves, and Vacuum Systems. She has hands-on expertise in system debugging, calibration, wiring diagram preparation, documentation, and plant maintenance, and has supported multiple NAL technology users including HAL, VSSC, CSIR–NAL divisions, Academic Institutions, and Industry partners, including Transfer of Technology (ToT) activities.

She has played a significant role in the CSIR–NAL High Altitude Pseudo-Satellite (HAPS) program, contributing to Ground Testing, Instrumentation, and Integration activities. Her work under HAPS includes MPPT-related support, Installation, and Integration of Solar Cells on Aircraft Wings, Data Acquisition Setup, and System-level Testing Support. She has actively participated in HAPS technology demonstrations, including Defense Expo, where MHZB/HAPS-related systems were demonstrated, Wings India , etc, supporting testing, display, and technical coordination activities.

She has also provided hands-on training and technical support to ToT partners during commissioning activities, including, training programs conducted at IISM, Dhanbad ensuring smooth adoption and operation of supplied systems. Her responsibilities further include Thermocouple Instrumentation, monitoring of cure cycles, preparation of SOPs, manuals, calibration records, and test reports.

She is a recipient of the Excellence Award in the field of Technical Support for the Design, Development, Installation, Commissioning, Testing, Training, and Transfer of Technology of Dual Zone Hot Bonder supplied to Composite Repair Shop, H-MRO, HAL. She has also received CSIR–NAL Intellectual Property Recognition for copyrighted software titled “Software for Desktop Autoclave” and “Software for Multi-Zone Hot Bonder”. Her work reflects strong hands-on expertise in Automation Systems, Aerospace Composite Processing, HAPS ground systems, and laboratory operations, contributing effectively to CSIR–NAL’s strategic Aerospace research programs.



Nizampuram Bhavani

B.E. (Computer Science)
Technical Officer
Aerospace Electronics & Systems Division
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Ms. Bhavani is working as a System Administrator and Network Administrator for the ALD Division, responsible for managing IT infrastructure, ensuring network reliability, and maintaining configuration control for critical aerospace projects. She has played a key role in Configuration Management for the IAFCC project, ensuring effective version control, documentation integrity, and compliance with aerospace quality standards.

She contributed to the development and maintenance of APMS (Aerospace Project Management System), an internal software tool designed to support AS9100 quality management processes. Her responsibilities include system administration, operational support, user coordination, and continuous maintenance to ensure smooth and reliable platform performance for project teams. She successfully completed IPC Training from 27 June 2019 to 1 July 2019, strengthening her understanding of electronics assembly standards and aerospace-quality workmanship practices. During the COVID-19 period, she additionally supported Purchasing and Vendor Payment Management activities critical to project continuity. She coordinated with the purchase section by submitting bills, tracking approvals, and following up to ensure timely vendor payments, enabling uninterrupted development of the SWASTHVAYU project under constrained conditions.

For her contribution to the Design and Development of the SWASTHVAYU project, she was part of the team that received the Technology Shield for Outstanding Group Achievement (2020–2021), recognizing innovation and commitment during a challenging period. Further strengthening her multidisciplinary expertise, she completed a certified course on Electrical Harness Design using the 3DEXPERIENCE platform, conducted by Karnataka Aerospace Technology Center from 18–20 and 25–26 July 2022, gaining exposure to aerospace electrical routing, harness modeling, and digital design practices.



Reshmi E

Diploma (Electronics Engineering)
Technical Officer
Aerospace Electronics & Systems Division
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Ms. Reshmi E is a Technical Officer with a Diploma in Electronics Engineering and a team member involved in the indigenous design and development of the Integrated Avionics and Flight Control Computer (IAFCC), a critical avionics Line Replaceable Unit (LRU) for the SARAS Mk II aircraft. She has also contributed to the development of the IAFCC Qualification Test Rig. Her responsibilities include IAFCC prototype testing, management, and verification of IAFCC I/O signals, pin mapping, system simulations, schematic design, and preparation of technical documentation.



Technical Assistant



Sowndarya R

Diploma (Electronics & Communication)
Technical Assistant
Centre for Electromagnetics
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Ms. Sowndarya provides technical support for advanced research in stealth material characterization, ensuring precise evaluation of the electromagnetic properties of composite materials synthesized by collaborating CSIR laboratories. She is actively involved in the setup and calibration of waveguide, free-space, and transmission-line-based experimental systems, and assists in the design, modelling, and simulation of materials using the waveguide method in CST Microwave Studio to accurately predict material behavior under electromagnetic exposure.

She also contributes to the testing and evaluation of antenna parameters, including radiation pattern, gain, VSWR, and return loss measurements, and supports the preparation of technical reports, data logs, and research documentation to ensure traceability and reproducibility of experimental and simulation procedures.

Senior Technicians



Kowser Fathima

B.Pharm and D.Pharm
Senior Technician - 2
Health Centre
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Ms. Fathima is a dedicated healthcare professional serving as a regular Pharmacist at CSIR–National Aerospace Laboratories (CSIR-NAL), Bangalore. With over 22 years of committed service, she has consistently contributed to the effective functioning of the Health Centre and to the well-being of its beneficiaries. She holds a Degree and Diploma in Pharmacy and has further specialized in Hospital Pharmacy, equipping her with comprehensive knowledge and advanced skills in medication therapy management, patient counseling, and healthcare delivery.

Throughout her career, Ms. Fathima has demonstrated a strong commitment to patient care and public health. Her role became particularly significant during the COVID-19 pandemic, a period marked by unprecedented challenges and responsibilities for healthcare workers. As part of the Health Centre team, she contributed extensively to patient care services and was honored, along with her colleagues, in recognition of their dedicated efforts during this critical time.

Having personally experienced the first wave of COVID-19, Ms. Fathima developed a deeper understanding of the fear and uncertainty faced by patients and the community. Motivated by this experience, she actively participated in public awareness initiatives, educating individuals about COVID-19 symptoms, prevention strategies, appropriate treatment, and the rational use of medications. She also worked to dispel misinformation and cautioned the public against unscientific remedies.

Within the Health Centre pharmacy, she implemented stringent infection control measures, including enhanced sanitization protocols and social distancing practices, to minimize transmission risks. She played a key role in supporting COVID-19 vaccination efforts by counseling patients, addressing concerns, and promoting vaccine acceptance. Beyond the pandemic response, she has consistently encouraged immunization against influenza and pneumococcal diseases and has promoted preventive healthcare measures such as smoking cessation, physical activity, and cardiovascular risk screening.

Ms. Fathima has performed her professional responsibilities on par with her peers, demonstrating resilience, dedication, and unwavering commitment. She takes immense pride in her profession as a medication expert and remains grateful for the support of her colleagues and her faith, which have helped her overcome personal and professional challenges throughout her distinguished career.



Sangeeta Sharma

M.A.

Senior Technician - 2

Administration

E-mail : sangeethas@nal.res.in



Ms. Sangeeta Sharma joined the CSIR–Central Building Research Institute (CSIR-CBRI) in 1988 as Technician Grade II(1) and began her career in the Architectural, Rural and Planning Group. Her dedication and technical competence led to a series of promotions—Technician Gr II(2) in 1995, Sr. Technician Gr II(3) in 2003, followed by Sr. Technician Gr II(4) in 2010.

After gaining experience in architectural drawing, she was posted to the Office of Civil Maintenance, where she handled tender-related documentation, contractor bill processing and financial compliances. She managed Sales Tax and Income Tax components related to contractual payments, maintained records and supported smooth functioning of workflow connected to civil works.

Later, she served in the General Section – Administration, where her responsibilities included tasks linked to GST, TDS on GST, Labour Cess and taxation for contractors. She coordinated with Chartered Accountants for statutory clearances, issued Sales Tax certificates and ensured accuracy and compliance in taxation-related documentation. She also handled tender advertisements, examined advertisement bills and facilitated financial processing for employee-related advances, adjustments and recoupments.

In 2020, Ms. Sangeeta was transferred to CSIR-NAL as Sr. Technician Gr II(4) and joined the Administration Division. She was posted to the Bills Section and handles processing of BESCOM and Solar Electricity bills, Dog Patrolling bills, Canteen bills, ESIC-related bills, Consultant payments, Multipurpose payments, and Telephone/Mobile/Newspaper reimbursement bills. She also processed Children Education Allowance, GPF advances and withdrawals, as well as LTC advances, adjustment bills, payments, and Encashment of Earned Leave. Further, she processed final GPF settlement and EL encashment for retiring employees, ensuring closure of service-linked financial benefits efficiently and systematically. Her service reflects steady growth, accountability and dedicated support across administrative, technical and billing domains in two CSIR laboratories over an extended and productive career.



Thanuja Kumari

Diploma in Computer Science
Senior Technician - 3
Administration
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Ms. Thanuja Kumari joined CSIR-NAL as technician and completed 35 years of service at CSIR-NAL, Bangalore, and CSIR-NGRI, Hyderabad, and is currently working at CSIR-NAL, Bangalore as a Senior Technician–III in the Salary Group, Bills Section, Administration. She has extensive experience managing divisional activities, having worked for 22 years in the Divisional Office of the Advanced Composites Division.

She also worked for 12 years at CSIR-NGRI, Hyderabad, in the Bills Section of Administration. During this period, she gained experience in generating pay bills for regular staff and received training in FoxPro programming used for payroll and income tax software. She was also trained in income tax (TDS) deductions for regular staff and pensioners. This training and experience have been highly valuable and instrumental in handling her current responsibilities. Leveraging this expertise, she continues to contribute effectively in her role at CSIR-NAL, Bangalore, in the Salary Group, Bills Section of Administration.



Usha

MLISc

Senior Technician - 1

Information Centre for Aerospace Science & Technology

E-mail : ushaicast.nal@csir.res.in



Ms. Usha serves as Senior Technician–1 at the Information Centre for Aerospace Science and Technology (ICASST), CSIR–NAL. She plays a crucial role in ensuring the smooth functioning of daily library operations and supporting the information needs of scientists, engineers, researchers, and students. As a Library Technician, she contributes to both technical and user-focused services, maintaining the efficiency, accessibility, and accuracy of library processes. Her responsibilities include managing core circulation activities such as registering new members—including JRFs, SRFs, AcSIR scholars, and retired employees—handling issue and return transactions, sending overdue notices, and issuing no-due certificates. She maintains control cards, oversees project book circulation, compiles usage statistics, and ensures systematic shelving and upkeep of physical collections.

She supports institutional membership processes by assisting with registration, renewals, and accurate recordkeeping for external and affiliated members. Her work forms an essential part of the knowledge dissemination framework at CSIR–NAL, bridging traditional library functions with digital services. In addition, she contributes to the maintenance of institutional repositories by uploading and organizing digital technical documents subscribed by various divisions. Her involvement in digital resource management strengthens the accessibility and long-term preservation of institutional knowledge.

Ms. Usha actively assists users in navigating e-resources and online tools such as OPAC, digital repositories, and scholarly databases. She has participated in user training sessions and orientation programs, helping new researchers familiarize themselves with platforms like Scopus and Web of Science. Her patient and service-oriented approach enhances user experience and supports informed research practices across the institute. As a dedicated woman technician in the library field, she takes pride in contributing to a learning environment that values curiosity, knowledge, and innovation. She believes that libraries function not merely as repositories of books but as dynamic learning spaces. Her commitment to adapting to new technologies and providing dependable support underscores her vital role in advancing the mission of ICASST and CSIR–NAL.



Technicians



Hardika Dhurve

ITI (Machinist), B.Com.
Technician - 1
Aircraft Prototype Manufacturing Facility
E-mail : hardika@nal.res.in



Ms. Hardika Dhurve is a skilled technician serving as Grade II (1) – Technician-1 in the Aircraft Prototype Manufacturing Facility (APMF). She holds Bachelors Degree in Commerce (B.com.), ITI qualification in Machinist trade and CITS certificate in Advanced Machine Tool, which forms the foundation of her technical expertise and precision-driven approach to manufacturing and machining operations. She has worked as Machine operator for 1.5 years (28.06.2023 to 08.10.2024) at PEPSICO, the second largest food and beverages company.

She joined CSIR-NAL on 16th October 2024 as Technician – I. In her role at APMF, Ms. Hardika is primarily responsible for the operation of conventional milling machines, demonstrating strong command over traditional machining techniques. Her work contributes directly to the fabrication of critical aircraft components, particularly for nationally significant programs such as SARAS Mk II and HANSA-3 (NG). She has played an essential role in producing complex parts that demand high accuracy, consistency, and adherence to stringent aerospace standards.

Beyond aircraft components, Ms. Hardika is actively involved in machining jig and fixture elements used for assemblies and testing setups, including key systems like the Iron Bird Facility of SARAS MK II. Her contributions extend across multiple divisions, supporting diverse project requirements and ensuring timely delivery of precision-engineered parts.

Ms.Hardika's proficiency also encompasses pre-machining operations for CNC components, where her preparatory work enables efficient downstream processing and enhances overall production workflow. Her adaptability and collaborative work ethic make her a dependable contributor to multidisciplinary manufacturing activities.

Throughout her tenure, Ms. Hardika has demonstrated a strong commitment to quality, technical excellence, and continuous improvement. Her role is integral to the successful execution of prototype manufacturing tasks within APMF, supporting the organization's broader mission of advancing aerospace research and development.



Prathima K T

ITI (Electrician) & Diploma (Electronics & Communication)
Technician - 2
National Trisonic Aerodynamic Facilities Division
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Ms. Prathima K. T. is a member of the Instrumentation team of the 0.6m and 1.2m Trisonic Wind Tunnels at CSIR-NAL. Her key responsibilities are preparing unsteady pressure models by calibrating and mounting Kulite pressure transducers on aerodynamic models, performing precise wiring and validation of transducer connections to pre-amplifier cards and data acquisition systems for high-fidelity wind tunnel tests. She is also involved in the Variable Mach Flexible Nozzle (VMFN) operation where she operates and maintains the VMFN system in the 0.6m tunnel, enabling real-time nozzle configuration changes during testing, ensures system readiness and supports operational troubleshooting to maintain test reliability.

For Force and Pressure Measurements, Ms. Prathima carries out strain gauge wiring and verification on aircraft, launch vehicle, and missile models, interfaces strain-gauge balances and pressure transducers with appropriate signal conditioners and data acquisition systems for force and moment evaluation. Her work also includes preparing models for multi-point pressure measurement using Electronically Scanned Pressure (ESP) sensors, perform calibration, wiring, and validation of ESP scanners, ensuring seamless integration with signal conditioners and data systems, prepare and maintain instrumentation setups for blowdown operations, co-ordinate for data acquisition during test runs, ensuring synchronization across various measurement systems. She is also working in Electronic Assembly & System Maintenance which involves assembling and wiring custom PCBs, servo electronic cards, and digital/analog interface boards, calibrating pressure transducers, ESP scanners, and Tunnel Pitch Systems in compliance with ISO standards. On a daily basis she supports general tunnel control system maintenance and assists in resolving electronic and instrumentation faults during wind tunnel testing.

Ms. Prathima has received specialized hands-on training in strain gauging for wind tunnel balance systems.



Administration



Bhavana Naveen

B.Sc., MBA (Finance)
Junior Secretariat Assistant
Administration
E-mail : Bhavana.Naveen@nal.res.in



Ms. Bhavana Naveen is presently entrusted with responsibilities connected to Civil and Electrical Works & Services at CSIR-NAL, Bengaluru, demonstrating strong administrative capability, technical understanding of procedures, and adherence to statutory compliance in work execution. Her role involves systematic processing of work contracts beginning from tender initiation to final bill clearance and documentation. She maintains and monitors Performance Guarantees, oversees procurement of stamp papers, execution of agreements, refunding EMD and Security Deposits to contractors after successful contract completion.

In addition to contract execution, she manages essential Lab service utilities including BESCOM Bills, Solar Power bills and BWSSB Water Bills, ensuring uninterrupted facility operations, Form III and Form VII to contractors for obtaining statutory labour licenses, Karnataka State Pollution Control Board (KSPCB)-related bills, maintains compliance documentation and assists in filing returns.



Mansi

B.A. (English Hons.), M.A. (English), B.Ed.
Assistant Section Officer (G)
ADK Division
E-mail : mansi.2025@csir.res.in



As a Dealing Officer, Ms. Mansi is entrusted with a wide spectrum of administrative responsibilities central to employee service management. Her role encompasses the systematic handling of Leave applications, Leave encashment, and maintenance of personal leave accounts ensuring accuracy, transparency, and timely approval in accordance with institutional regulations. She efficiently processes Leave Travel Concession (LTC) claims, scrutinizing documentation, verifying eligibility, and facilitating reimbursement in a seamless manner, thereby enabling employees to avail travel benefits without procedural delays.

In addition to LTC and leave administration, she manages Tuition Fee reimbursement cases, ensuring that eligible employees receive educational support for their dependents as per Government norms. Her work extends to the compilation and upkeep of Service Records, which includes updating personal data, tracking transfers, promotions, training details, and retirement-related information.



Namratha P

M.Com., PGDMM
Assistant Section Officer
Administration
E-mail : namrathap@nal.res.in



Ms. Namrata joined CSIR-NAL on 25 August 2015 and has been serving with dedication in both Stores & Purchase and Administration functions. She worked in the Stores and Purchase Section from 25 August 2015 to 24 July 2024, On her promotion, during 2024, she has been posted in the Administration Section, managing Civil and Electrical Works & Services at CSIR-NAL, Bengaluru. Her duties include floating tenders on the CPP Portal, opening technical and financial bids, preliminary verification of GST, PAN, EMD and tender fees, issuing LOA/LOC, maintaining performance guarantees, executing agreements, processing running account bills, refunding EMD and security deposits, and issuing corrigenda. She also handles security contract tenders, including evaluation, award, extension, invoice processing, and deployment of additional manpower, along with any other tasks assigned by higher authorities.

Her service reflects her expertise in procurement, administrative coordination, financial processing, and statutory compliance, demonstrating professionalism, and commitment across multiple functional areas at CSIR-NAL.



Rekha H Yadav

B.com.
Assistant Section Officer(Gen)
Health Centre
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Ms. Rekha H. Yadav serves as Assistant Section Officer (ASO) in the Health Centre of CSIR–NAL. In her role, she provides comprehensive administrative and operational support essential to the smooth functioning of the Health Centre, demonstrating efficiency, accountability, and commitment to service.

She manages all office correspondence, including attending to phone calls, responding to queries from employees, pensioners, and distributors, and handling requests for repeat medicines. She maintains attendance records of Health Centre staff, including Casual Leave (CL), Restricted Holiday (RH), and Compensatory Off accounts. Her responsibilities also include drafting and typing official memoranda and letters to the Stores and Purchase Departments, vendors, and other stakeholders, both in hard copy and through the E-Office system.

Ms. Yadav plays a key role in processing medical documentation and financial matters. She assists pensioners by preparing OPD prescriptions based on hospital bills and dispatches inpatient bills for further processing. She raises Financial Vetting Certificates (FVC) for visiting specialists' honorarium bills and for the General Revolving Fund, ensuring timely submission to Accounts and Purchase Departments. She also handles proposals for bulk medicine indents, AMC renewals of medical equipment, and amendments related to vendors, distributors, and pricing. Her duties extend to meticulous record-keeping and database management, including entering details of retired staff and fresh employees into AROGYA and D2K software, allocating new identification numbers, updating patient records with lab reports and discharge summaries, and maintaining movement and stock registers. She coordinates medicine procurement from initiation of indent to receipt and certification, forwarding bills for RTGS payment and ensuring compliance with institutional procedures.

Additionally, she oversees maintenance and repair requests for medical equipment, civil works, and essential utilities within the Health Centre. She arranges referrals and authorization letters for critical patients, dispatches lab reports and medicines to elderly pensioners, and ensures regular indenting of drugs and sanitary supplies. In the absence of support staff, she responsibly opens the dispensary, reflecting her dedication and reliability in supporting uninterrupted healthcare services.



Savitha K

MBA (HR), M.A. (Eng Lit.)
Assistant Section Officer (G)
General Administration
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Ms. Savitha K has over 18 years of experience contributing significantly to the organisation through her dedicated service across multiple administrative services at CSIR-NAL Bengaluru. Her professional journey reflects versatility, commitment and in-depth understanding of CSIR rules and procedures.

In the Pension Section, she efficiently handled all pension-related matters, ensuring timely processing of retirement benefits, maintaining accurate records, and assisting retiring employees with clarity and empathy. In the Establishment Section, she maintained service books, and personnel documents with the highest level of integrity and accuracy. In the General Section, she contributed to day-to-day administrative functions of KV, Outsourced Manpower, SBI etc, including correspondence, circular preparation, office management, and coordination with different wings of the organisation.

In 2021, she appeared for the LDCE for the post of Assistant Section Officer and was topper, and on promotion, she was posted to the Assessment Section where she played an important role in handling assessment-related files, coordinating with committees, preparing documents for review, and ensuring compliance with established rules and procedures.

Apart from routine assignments, she has actively worked with various committees constituted by the Director of the Laboratory like Local Grievance Committee, Staff Club, Kannada Samskruthika Sangha, Matrubasha Organising Committee, SC/ST Welfare Committee, Creche Monitoring Committee etc., contributing to cultural events, welfare initiatives, disciplinary committees, and organisational activities.



Shyamala S

B.Com., M.A. (Hindi), PGD in Translation Methodology
Hindi Officer
Hindi Section, ADK
E-mail : shamla@nal.res.in



Ms. Shyamala has over 26 years of experience in the field of Official Language Implementation. She began her career on 14 October 1999 by joining in CSIR-NAL as a Junior Hindi Translator and have since advanced to the role of Hindi Officer.

Throughout her career, she has been dedicated to promoting and implementing the Official Language Policy of the Government of India within the organization. Her work involves ensuring compliance with the Official Languages Act 1963, Rules 1976, and Orders, facilitating translation of documents, reports and publications in Hindi to English and vice versa, and organizing various programs like workshops, seminars, various committee meetings to encourage the use of Hindi in official communication.

She played a key role in guiding departments to adopt bilingual practices, preparing reports for Official Language Inspections, and coordinating with the Department of Official Language (Ministry of Home Affairs) to ensure smooth execution of language implementation programs. Her contributions aim to strengthen linguistic harmony and uphold the vision of progressive use of Hindi in scientific and administrative domains. With a deep commitment to accuracy, policy compliance, and effective communication, she continue to contribute to the mission of CSIR-NAL and the broader objective of promoting India's Official Language across research and administrative functions.



Sudha Sharma

B.Sc. Computer Science, B.Ed.
ASO (Gen)
Administration
E-mail : sudha.sharma01@csir.res.in



Ms. Sudha Sharma, ASO was appointed at CSIR–NAL, Bengaluru in March, 2025. She is posted to Recruitment Section for handling the recruitment of Gr. II – Technician.

Her job includes verification of all the applications received for Gr.II position and conducting the Screening Committee meetings.



Usha Kalludi Nagaraja

B.A.L. (Bachelor of Academic Laws)
Administrative Officer
Administration
E-mail : usha3852@nal.res.in



Ms. Usha joined CSIR–NAL on 22 November 2010 as a Section Officer and was promoted to Administrative Officer with effect from 29 December 2020. Despite being visually handicapped, she has consistently demonstrated efficiency in administrative functions.

In addition to B.A.L, She has obtained LL.B., MA (FRENCH), Advanced Diploma Course in Spanish, Diploma in ITALIAN and Certificate Courses in MS Office and PORTUGUESE.

Currently, Ms. Usha serves as the Nodal Officer for the Pension Cell, where she is responsible for overseeing all pension-related activities, documentation for retiring employees. She ensures strict compliance with applicable rules and regulations.



Vijayalakshmi B

B.Sc.
Section Officer (G)
Administration
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Ms. Vijayalakshmi has completed 25 years of dedicated service at CSIR-NAL, having joined the organization on 3 December 1999. She began her professional journey as a Junior Stenographer, initially serving in the Office of the Head, RNCAC (formerly known as C-CADD). In this role, she efficiently managed office correspondence, attended calls and visitors, arranged meetings, handled FVCs and PDs, maintained files and records, facilitated tour programmes and vehicle arrangements, and extended support to the Head as well as other division staff whenever required.

With a keen interest in administrative work, she appeared for the LDCE conducted by CSIR in 2011 for the post of Assistant Section Officer, successfully qualified, and was promoted in April 2012, after which she was posted to the Administration Wing. She served in the Establishment Section until 2021, handling responsibilities with reliability and efficiency. During the nationwide lockdown, she continued attending office to process critical retirement-related files, for which she received an official Certificate of Appreciation from the Laboratory — acknowledging her dedication during challenging times.

In 2021, she successfully cleared the LDCE for the post of Section Officer, following which she was promoted and posted to CSIR-NAL Belur Campus in the Establishment section. She actively contributed to clearing several old pending files while ensuring smooth workflow and timely disposal of matters. After one year, she was transferred to the Assessment Section, Kodihalli, where she continues to serve. This section manages assessment and promotion processes for employees across all cadres — scientists, technical staff, administrative personnel, and MTS. Beyond her official duties, she has actively contributed as a member of several internal committees, including Kannada Sangha, Canteen Committee (Belur), Sports Club (two terms), Campus Welfare Committee, and Matrubhasha Diwas Committee. She currently serves as a Member of the Women's Welfare Committee.



Anupama R

B.Com, MBA
Senior Principal Private Secretary
Director's Secretariat
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Ms. Anupama R joined the esteemed organization of CSIR in the year 2003. Her initial posting was at CSIR-CFTRI as a Senior Stenographer in May 2003, and she received her first promotion as Private Secretary in December 2010 through departmental examination. Her tenure at CFTRI was enriching, as it provided her with exposure to serving on various administrative and other committees, conferences, and council meetings, in addition to her designated responsibilities. Her experience in administrative divisions further enhanced her knowledge base after being promoted as Private Secretary. She had the privilege of performing the assigned duties as part of managerial activities and was also associated with organizational award-related responsibilities.

Her posting to CSIR-CSMCRI in 2022 on promotion as Principal Private Secretary for about a year enabled her to experience a new laboratory environment and work culture. Presently, she is posted at CSIR-NAL as Senior Principal Private Secretary. Initially, she worked at the Surface Engineering Division and later at the Director's Secretariat from November 2023. She provides assistance to the Director and manages the Director's Secretariat, handling all assignments connected with the Director's Office while maintaining a good interface with other agencies and departments. She has maintained an excellent track record with strong communication skills and has coordinated high-profile visits of Ministers and other high-level dignitaries. She facilitates the smooth functioning of the Director's assignments, including travel, meetings, conferences, coordination meetings, international travel, and other responsibilities associated with the Director's Office.



Brijita Pramodhini

B.Com., Diploma
Senior Stenographer (MACP)
Advanced Composites Division
E-mail : brijita.pramodhini@csir.res.in



Ms. Brijita Pramodhini is serving as a Senior Stenographer (MACP) in the Advanced Composites Division (ACD) where she plays a vital administrative and coordination role supporting divisional operations.

With a keen eye for detail and strong organizational skills, Ms. Pramodhini oversees a wide range of responsibilities. She efficiently manages the coordination and arrangements for divisional meetings, AS 9100 group meetings, and online sessions. She provides essential documentation assistance to the scientists of ACD, including photocopying, scanning, filing, and email correspondence. Her contributions extend to managing hospitality for visitors and staff, maintaining daily housekeeping coordination, and ensuring the smooth tracking and processing of documents requiring HOD's approval. She also updates leave records for the division's staff in the Biometric Attendance System.

Ms. Pramodhini plays a key role in handling financial processes related to daily canteen services, including clearing bills for tea, snacks, and working lunches through UTN generation under respective projects. Additionally, she prepares daily milk bill lists for staff working with hazardous chemicals and compiles monthly rosters for duty officers for security coordination.

Her responsibilities also encompass maintaining contract staff and project assistants' attendance records, tracking file movements, managing divisional purchases, and coordinating actions with other divisions or external organizations as needed. She ensures the availability of stationery for ACD staff and maintains monthly stock replenishment.

Known for her discretion and reliability, Ms. Pramodhini handles sensitive and confidential information with professionalism and adheres strictly to institutional protocols. Her diligent efforts contribute significantly to the smooth functioning and administrative efficiency of the division.



Chayadevi K

Diploma (Commercial Practice)
Private Secretary, SO
Finance & Accounts Division
E-mail : chayadevi.k@csir.res.in



Ms. Chayadevi serves as Section Officer (Finance & Accounts) entrusted with extensive responsibilities covering pension, projects, payroll, and audit coordination. Her pension-related work includes handling superannuation and family pension cases, processing retirement benefit bills such as gratuity and commutation, admitting pension debit and credit scrolls, and scrutinizing medical bills of nearly 1,400 pensioners. She prepares revised and estimated pension budgets and undertakes actuarial valuation of pension liabilities as required by CSIR Headquarters, while also coordinating with pensioners, CPPC, and SBI to resolve pension-related issues.

In addition, she processes all payment and receipt bills, files, and proposals relating to around 180 Extra-Mural and ECF projects, including SSP, GAP, TSP, CNP, DST, and CNA projects. Her role involves issuing utilization certificates, certifying availability of funds, tallying project accounts with the balance sheet, and passing salary and personal claims of Group II, administrative staff, and officers, including pay fixation, service verification, and leave accounts. She also handles P-04 contingency bills, GPF and NPS bills, and coordinates with CSIR Internal Audit, CAG Audit, SAR Audit, and Lab Reserve Audit by compiling and forwarding replies in the prescribed formats. She further provides secretarial assistance to the COFA and undertakes all other duties assigned by senior officers.

A key contribution of her tenure includes successful migration and reconciliation of about 150 ECF projects in the AMS software, clearance of old opening balances through the OB Special Task Committee, and effective coordination with internal and external audit teams. Her exemplary service has been recognized with Outstanding Performance Awards for pension settlement (1998), maintenance of investment accounts (2013), and excellent support to Finance & Accounts (2025).



Jayasree P G

M.A., M.Phil. (Literature)
Senior Hindi Officer
Hindi Sec, ADK Division
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Ms. Jayasree P.G. joined CSIR on 26 December 1996 and has been serving as a Senior Hindi Officer at CSIR-NAL, contributing significantly to the implementation of Official Language (OL) policies and the promotion of Hindi in official work. Over her long and dedicated service, she has consistently demonstrated expertise in translation, administrative coordination, and policy implementation.

Her primary responsibilities include translation of official documents from English to Hindi and vice-versa, along with vetting for accuracy, consistency, and compliance with government norms. She actively ensures that officers and staff are aware of the provisions of the Official Language Act, government rules, and orders, and facilitates training and guidance to implement these in day-to-day office operations.

As the Secretary of the Official Language Implementation Committee (OLIC), she convenes meetings, prepares agendas and minutes, monitors action taken reports, and coordinates follow-up on decisions approved by the committee. She provides recommendations for the progressive use of Hindi in the office and maintains regular liaison with the Department of Official Language, ensuring proper communication through official channels.

She is also responsible for preparing reference materials and assistance literature, organizing Hindi workshops, and supporting officers and staff in learning and using Hindi effectively in official business. She ensures that all targets set in the Annual Programme prepared by the Department of Official Language are achieved within prescribed timelines.

Her excellence in administrative and language work has been recognized through prestigious awards, including the Outstanding Performance Award for Best Administrative Support in 2018, and the First Prize from TOLIC (O-1), URSC, Bengaluru in 2023 for the best implementation of Official Language Policy at CSIR-NAL.

Through her meticulous work, commitment to policy compliance, and promotion of Hindi in official communication, Ms. Jayasree has played a pivotal role in ensuring that CSIR-NAL meets its statutory obligations under the Official Language Act. Her professional dedication continues to inspire officers and staff, fostering a culture of bilingual efficiency and administrative excellence.



Lakshamma

PUC, Senior English Typing & Int. Shorthand
Senior Kannada Typing & Shorthand
Private Secretary
PBMD & DTS Division
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Ms. Lakshamma, a Private Secretary, she currently serves in the Project & Business Management Directorate (PBMD) and the Director's Technical Secretariat (DTS) at CSIR-NAL. Over nearly three decades of service, she has contributed extensively to administrative management, documentation, event coordination, and academic facilitation across multiple divisions.

From 1996 to 2020, she served at ICAST, providing dedicated stenographic support to the Head of the division and maintaining key operational registers. She created and maintained important databases such as the OPAC (Open Access Catalogue) for library documents, editorial support for the CSIR-PTC Quarterly newsletter, and documentation for ISO 9001:2008 compliance. She also contributed to the IRINS profiles of CSIR-NAL scientists. Her responsibilities included supporting OneCSIR application roles, managing attendance systems, and contributing to divisional events.

Between 2020 and 2024, during her tenure in SysED/Civil Aircraft Program Office, she coordinated online and offline meetings involving the Director's Office, PD-SARAS Mk II, PD-RTA, and PGD-CAP group. She played a key role in liaising with Purchase and Finance Divisions for timely salary payments to PAs, consultants, and contract staff, and worked closely with external man-power related agencies on contract-related matters. She supported work package activities, day-to-day project office operations, and maintained attendance records for the division.

Since January 2025, she has been contributing to PBMD and DTS. In PBMD, she manages file entries in the File Track System and processes UTNs for project allocations in PFM software. In DTS, she assists the Academic & Human Resources Development Group by facilitating internship and project work processes—from student registration to issuance of certificates. She also handles conference and seminar documentation and supports liaison activities with Kendriya Vidyalaya.

Her achievements include contribution to ICADL-2001 media coordination, earning cash awards for Hindi work, participating in translation training programs, promoting official language usage, and receiving the Best Divisional Representative – OL award. Remarkably, she has maintained an Outstanding APAR rating for the past 20 years, reflecting her exceptional dedication and performance.



Latha M

SSLC, Senior English Typing, Senior English Shorthand
Private Secretary
Information & Communication Technology Division
E-mail : latham.nal@csir.res.in



Ms. Latha M serves as a Private Secretary in the ICTD/Telephones Division at CSIR-NAL. Since joining the organization as a Junior Stenographer in 1996, she has dedicated nearly three decades of service to administrative efficiency, communication support, and institutional coordination.

During her initial years in Administration/Sec. III, she contributed to a wide range of secretarial and documentation responsibilities, supporting smooth office functioning. Due to health considerations, she was later transferred to the Telephone Exchange, where she continued to demonstrate professionalism, adaptability, and strong administrative skills. In 2023, her commitment and performance earned her a promotion to the position of Private Secretary.

In the Telephone Exchange, Ms. Latha plays a vital role in ensuring seamless communication within the organization. She manages operator board calls, handling both external trunk lines and internal user calls with competence and courtesy. In addition, she provides stenographic assistance and maintains essential registers, including the FVC and Revolving Fund records, contributing to accurate documentation and audit readiness.

Her responsibilities also include supporting administrative operations such as local purchases, preparation of Internal Office Memos (IOMs), and facilitation of various financial and communication-related processes within the division. A key part of her contribution is the meticulous editing and updating of CSIR-NAL's internal telephone directory. She consolidates inputs from various user departments, maintains the data in an Excel database, formats it into a print-ready PDF with appropriate layout and alignment, and ensures its timely upload to the intranet. This work supports organization-wide communication and accessibility.

Ms. Latha's dedication has been recognized through multiple institutional awards, including the Excellence Award for Infrastructure Support Service for the years 2016–17 and 2019–2020. Her consistent commitment, attention to detail, and service-oriented approach have made her an integral part of the institute's communication infrastructure. Through her reliability, administrative coherence, and technical support, she continues to contribute significantly to the operational efficiency of CSIR-NAL.



Pooja Dipesh Shah

B.Com., Executive General Management Programme
HR Manager
Project & Business Management Directorate
E-mail : pooja.dipeshshah@csir.res.in



Ms. Pooja Dipesh Shah serves as HR Manager in the Project & Business Management Directorate (PBMD) at CSIR-NAL. She holds a Bachelor of Commerce degree and has completed the Executive General Management Programme from the Indian Institute of Management, Bengaluru. With a strong background in project planning, monitoring, administrative coordination, and ERP-driven process management, she has contributed significantly to the efficient functioning of PBMD and its alignment with NAL–CSIR objectives.

Her role has progressively evolved from operational support to comprehensive project lifecycle management, encompassing initiation, planning, execution, monitoring, and closure. She plays a critical part in preparing project cost estimates, defining timelines, tracking progress, and coordinating with R&D divisions as well as external government and private agencies. Her structured approach supports resource allocation, milestone monitoring, and early identification of risks, enabling proactive corrective actions. She is actively engaged in major mission-mode projects, including Manufacturing of Production Standard Hansa-3 (NG) Aircraft for Flight Training Organizations (FTOs) and the Joint Collaboration for R&D, Manufacturing, and Commercialization of 150-kg Category Loitering Munition UAV.

In earlier responsibilities, Pooja managed essential administrative functions such as documentation, bill processing, salary-related coordination, and preparation of reports and briefs for leadership review. She served as a central communication node between internal teams and external partners, ensuring clarity, timeliness, and smooth coordination across multiple stakeholders.

A significant part of her contribution lies in her work with OneCSIR, the organization-wide ERP platform. She has collaborated with IT teams and functional departments to enhance ERP utilization, resolve user issues, and streamline digital workflows. Her efforts have supported improved transparency, efficiency, and data-driven decision-making within the Directorate.

Committed to continuous growth, Pooja brings values of learning, collaboration, and adaptability to all her responsibilities. In her current role within PBMD, she remains dedicated to strengthening organizational processes through structured planning, coordinated execution, and the effective use of technology. Her professional approach and commitment to excellence continue to support the Directorate's strategic initiatives and CSIR-NAL's broader mission.



Poornima A S

B.Sc. (Electronics), MBA (Finance)

Receptionist

Project & Business Management Directorate

E-mail : aspoorni.nal@csir.res.in



Ms. A. S. Poornima serves in the Project & Business Management Directorate (PBMD) at CSIR-NAL, where she plays a pivotal role in digital workflow management, project monitoring, and administrative integration.

A key responsibility entrusted to her is the management of the ACCESS Software - CSIR's web-based single-window application for the Supply Chain Management system. In this role, she oversees the seamless functioning of Stores and Purchase activities routed through the ACCESS platform, ensuring transparency, accuracy, and operational efficiency. Her work supports the entire procurement lifecycle, facilitating timely processing, compliance, and data integrity across multiple user divisions. Poornima has also been deeply involved in the execution, monitoring, and value-creation activities of Performance Monitoring and Evaluation (PME) for CSIR-NAL. Her contributions span several major initiatives within the Aero Thermal Cluster, including flagship programs in NTAF, Propulsion, EAD, and CTFD. These projects form the technological backbone of CSIR-NAL's research and development efforts, and her meticulous coordination and data management have strengthened their delivery, documentation, and governance. Smt. Poornima A S gained her early professional experience in General Administration at CSIR-NAL, where she contributed to administrative support and services. She was also actively involved in project accounting activities for several organizations, including Kendriya Vidyalaya, Mach 33 (FARIE), the National Informatics Centre, HAL, State Bank of India, BSNL, and the Indian Postal Department. Her broad technical background in computing and applications, combined with financial expertise through her MBA, enables her to bridge operational, digital, and administrative workflows effectively. She contributes to enhancing process efficiency, supporting evidence-based decision-making, and maintaining structured oversight of complex, multi-disciplinary programs.

Ms. Poornima's dedication, precision, and consistent performance have earned her notable recognition within the organization. Her work has been rated "Outstanding" for four consecutive years, reflecting her commitment to excellence and her valuable contributions to CSIR-NAL's project management and digital operations ecosystem. Through her technical proficiency, disciplined execution, and dependable support to mission-critical activities, Ms. A. S. Poornima continues to play an integral role in strengthening CSIR-NAL's operational framework and contributing to the institute's vision of scientific advancement and organizational efficiency.



Radha T

M.Com.
Private Secretary
Surface Engineering Division
E-mail : radha@nal.res.in



For over thirty three years from 1990 to 2023, Ms. Radha worked in Director's Secretariat and consistently played a pivotal role in assisting all the Directors right from Prof. R Narasimha, Dr. K N Raju, Dr. T S Prahlad, Dr. B R Pai, Dr. A R Upadhyaya, Mr. Shyam Chetty, Mr. Jitendra J Jadhav and Dr. Abhay A Pashilkar in providing administrative and secretarial support. As the role is far more intricate and demanding, closely monitored various activities pertaining to national programmes like SARAS, HANSA, HAP, RTA, Wind Tunnel, UAV and other projects of CSIR-NAL like arranging reviews, meetings within CSIR-NAL and with outside agencies like HAL, ADA etc., and with CSIR HQs. Assisted during various high profile visits of Hon'ble Minister of Science and Technology, Foreigners and other official programmes of the laboratory not only with just organizational prowess but also with situational awareness. Provided assistance to all the above Directors in carrying out their tour of Duty in organising Research Council and various other meetings. Co-ordinated for the Directors' official tours (both India and abroad).

She maintains records of all the correspondences both in file form and e-form. She Creates congenial atmosphere while working at office not only with staff but also with visitors. Fortunate to make 2 videos on NAL, one for the 63rd NAL Foundation Day and the other being the video on HANSA aircraft, using the available infrastructure. From Nov'2023 till date, carrying out the duties and responsibilities of Private Secretary to Adviser (M&A) & Head-SED, CSIR-NAL. Initiated online Utilization Portal at SED for various testing facilities of the division instead of manual written forms thus enabled paperless office. She has Obtained CSIR-NAL Outstanding performance awards during 1998 and 2011 for Excellence in Administrative Support and Excellent service also in 2021 for Service rendered during Covid-19 Pandemic and Nationwide lockdown.



Sanjeetika Kumari

B.A.
Junior Stenographer
Aerospace Electronics & Systems Division
E-mail : sanjeetika.kumari@csir.res.in



Ms. Sanjeetika provides comprehensive stenographical and administrative assistance to the PGD, ALD, and SysED divisions. Her responsibilities include taking dictation, accurately transcribing documents, and attending meetings and conferences to record live notes. She manages multiple modes of communication, including emails and phone calls, drafts and responds to correspondence, and handles administrative tasks such as raising FVC bills and processing purchase access requests. She maintains important official records, including notices, IOMs, circulars, and PP files, while consistently ensuring confidentiality and professionalism.

She is responsible for arranging security clearances for foreign scientists visiting the division and supports her reporting officer with a wide range of day-to-day administrative duties. She maintains effective coordination among scientific and technical staff members and manages office calendars for executives and staff. She also organizes and coordinates meetings, conferences, appointments, and events, ensuring smooth logistics and timely execution. In addition, she maintains attendance and leave records for ALD and SysED staff and prepares Requests for Quotation (RFQs) for divisional procurement activities.

Her contributions extend to efficient handling of official correspondence by filtering emails, drafting responses, and preparing reports. She ensures meetings and appointments are scheduled without conflicts and that all arrangements are finalized well in advance. She prepares, edits, and organizes documents, presentations, and reports, and assists in meeting organization by preparing agendas, setting up conference calls, and recording minutes, including live note-taking when required. She also manages travel arrangements, including booking flights, accommodation, and local transportation, and prepares detailed travel itineraries.

In project-related activities, she supports teams by tracking progress, gathering required information, and coordinating with various stakeholders. She is proficient in the use of office productivity tools such as MS Word, MS Excel, spreadsheet applications, Microsoft Project (MPP), and other relevant office technologies. In addition to her defined responsibilities, she carries out any other duties assigned by her reporting officer, contributing to the efficient functioning of the divisions she supports.



Shashikala B C

B.A., LL.B
Senior Stenographer
Flight Mechanics and Control Division
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Ms. Shashikala joined CSIR–NAL on December 20, 1999, as a Junior Stenographer. She initially served in the Structures Division and later transferred to the Knowledge, Technology Management Division (KTMD) in February 2022. In 2023, she worked in the Documentation and Technical Services (DTS) and Project & Business Management Divisions (PBMD, formerly KTMD), before moving to the Materials Science and Flight Mechanics Divisions in January 2025.

Throughout her tenure, Ms. Shashikala has provided vital stenographic and secretarial assistance to Heads, Joint Heads, Deputy Heads, Cluster Chairmen, scientists, and staff. Her responsibilities include arranging and coordinating day-to-day meetings, maintaining attendance records for regular, contract, and project staff, and managing leave entries through attendance software. She implements office procedures, organizes travel and logistics, manages office supplies, and handles correspondence via email, fax, and telephone. She efficiently raises stipend bills for project assistants and prepares financial vetting certificates (FVC) for divisional purchases through the Government e-Marketplace (GEM) portal.

Ms. Shashikala also coordinates student internships and project work, liaising between students, colleges, and lab guides, and manages correspondence related to staff participation in conferences and seminars. Her extended secretarial support has been crucial during key events and programs such as the XI NASAS conference on Experimental Technologies and Testing Methods (2002), the “State of the Art of Transonic Flutter Prediction” workshop (2007–2009), the RTA and NCAD programs, the Integrated Vehicle Health Management program, and CSIR-JRF examinations conducted at CSIR-NAL in 2018 and 2019. She has also assisted the Director’s Nominee for KV School and supported the Advisers for Welfare, Work and Services, and Materials & Administration during her tenure in the Structures Division, exemplifying her versatility and commitment to CSIR-NAL’s smooth functioning.



Shoba C

Diploma (Secretarial Practice),B.A. (Pub. Admin.), PGDMM
Principal Private Secretary
Stores & Purchase
E-mail : shoba@nal.res.in



Ms. Shoba C joined CSIR-NAL on 21st November 1990 as Jr. Stenographer and was posted in Administration as PA to AO. Promoted as Sr. Steno in October 1992, Pvt. Secretary in February 2016 and at present working as Pr. Pvt. Secretary from 1st January 2024. When spot payment of medical and newspaper claims was introduced, actively involved in passing the bills for making payment. During May 1999, She was transferred to S&P Division. In the year 2002, CSIR framed new Purchase Procedure and the concept of Standing Purchase Committees (one for consumables and one for capital goods) were introduced. Accordingly, two Committees were constituted at CSIR-NAL and Purchase Files were placed before the respective Committees for clearance before processing further.

In the year 2004, 100% Physical Verification of Stores was carried out for the first time at CSIR-NAL. Physical Verification of Stores is the process of actual counting/verification of all items of stock to ensure that materials are available as shown in the Stock Ledgers. Conducting 100% Physical Verification of Stores periodically will ensure that the value of assets reflected in the Balance Sheet are also physically available. In order to carry out the task, a Circular was issued to all the HoDs to depute 2-3 staff members from each Division who shall function as "Verifiers". These Verifiers shall check for physical availability of all the items of the PIR (Personal Inventory Register) holders and submit report to the Committee. A Committee was constituted for this purpose. The Committee will reconcile the reports given by all the Verifiers and submit its report to CSIR Headquarters.

On Promotion as Pvt. Secretary (2016), in addition to providing secretarial assistance, I deal with the procurement activities valuing up to ₹ 5.00 lakh (Rupees Five Lakh only) on each occasion of all the Divisions in Kodihalli Campus and Medical Files, irrespective of the value. On promotion as Pr. Pvt. Secretary, I was posted to CSIR-NAL, NWTC-Belur Campus, as In-charge, S&P w.e.f. 14th February 2024. Dealt with the procurement activities pertaining to all the Divisions in NWTC-Belur Campus, except CCFP Division. Convened Purchase Committee Meetings. Attended to the Stores work during the absence of SO(S&P), Stores (B).

She has Received Outstanding Performance Award twice (Admin and S&P) in her Career.



Shobha S

Diploma (Commercial Practice), B.Com.
Principal Private Secretary
Structural Technological Division
E-mail : shobha.s@nal.res.in



Ms. Shobha is working as secretary to the Head of the Division, Structural Technological Division.

Her contributions include secretarial assistance in day-to-day activities of the Division, collection of information, compilation of data, Office management, assistance in fixing up of appointments, maintaining engagements / meetings of the Officer, screening of calls, visitors and email handling, proper maintenance and custody of office equipment viz., computers, photocopier, etc. overall in-charge of office in routine work.

She has won twice the individual and also Double Winner trophy in CSIR's SSBMT Carrom championship.



Vijayalakshmi L

B.Com.
Private Secretary
Computational & Theoretical Fluid Dynamics Division
Email : vijayalakshmi.l@csir.res.in



Ms. Vijayalakshmi has been assisting the Head of Department on daily operational activities of the Division. Initiating Purchase Indents, processing FVC bills, requisitioning stationery, compiling Work Packages, managing SDNs, coordinating Canteen Indents, and submitting Work Requests utilizing PFMS, ERP, and Access software. Overseeing the movement of files and registers, managing Divisional Purchases, executing Local Purchases, and diligently following up on files for requisite actions. Updating leave applications for Division personnel in the Biometric Attendance software. Facilitating the organization of Divisional meetings, lectures by Divisional Scientists, and presentations by external speakers.

She has provided secretarial assistance during conferences and workshops as necessary. Engaging in interactions with other Divisions and organizations as required, and ensuring appropriate follow-up on actions. Contributing to the documentation of the Annual Report and assisting the Divisional Scientists in their daily tasks whenever needed. Composing letters, Internal Office Memorandums (IOMs), and other correspondences.

She has Assisted the Trust for Advancement of Aerodynamics in India (TAAI) in correspondence and maintenance of files and accounts from 2012 - 2016 and provided Secretarial Assistance in organising TAAI Foundation Day Function on 22nd March 2024 at CSIR-NAL Bangalore. Served CSIR-NAL SC/ST Association as Executive Committee Member from 2016 – 2021. Secretarial Assistance for the Local Organizing Committee in organizing "National Conference on Contributions of SC/ST Scientists and Technologists towards Advancement of Science and Engineering" held at CSIR-NAL, Bangalore during 23 - 25 January 2018. Secretarial Assistance to the local Organising Committee in organizing 18th, 19th, 20th and 21st Aeronautical Society of India CFD Symposium, held at CSIR-NAL during the month of August, from 2016 – 2019. Secretarial Assistance to the Organising Committee in conducting International Conference, 14th Asian Computational Fluid Dynamics Conference 2023, held during 30th October to 2nd November 2023, at HAL Management Academy, Bangalore.

In Addition to CTFD Division work she was also handling National Trisonic Aerodynamics Facilities (NTAF) Division Office work for half a day for 2 years from 21.06.2021 to 31.06.2023. In NTAF Division she was assisting the HOD and Raising Purchase Indents, FVCs bills, Work Packages, SDNs, Canteen Indents, updating leaves of the division staff in Biometric.



Vimala Srinivasan

B.A. & Diploma
Private Secretary
Administration
E-mail : vimala.srinivasan@csir.res.in



Ms. Vimala Srinivasan, is serving in Gen. Administration CSIR – NAL, Bengaluru for the last three decades. She is assisting the Senior Controller of Administration in the day to day activities. Besides managing the Senior CoA's Secretariate, she also functions as the Chief Public Information Officer and Nodal Officer for RTI , Convener for matters related to Prevention of Sexual Harassment ACT at Work Place, Nodal Officer for SHE Box Portal and Member Secretary for Local Grievance Committee.

She also assists the Nodal Officer in CPGRAMS and helps in organising and conducting Management Council meetings, CSIR Foundation Day, CSIR-NAL Foundation Day and institutional events.

She has been awarded the CSIR – NAL Foundation Day Award for her excellent work in Gen. Administration thrice in her career.

Finance & Accounts



Ayushree Pratik Chore

B.E. (Computer Science)
Assistant Section Officer
Finance & Accounts Division
E-mail : ayushree.pratik@csir.res.in

Ms. Ayushree Pratik Chore is associated with the Finance & Accounts functions at CSIR, where her work portfolio primarily involves auditing bills related to major CSIR projects such as SARAS and HANSA. Her responsibilities include scrutiny and processing of capital bills and P-07 bills, as well as handling salary bills of project assistants and apprentices engaged across various CSIR projects. She also processes travelling allowance bills, consultant bills, and other related financial claims. Through her role, she contributes to ensuring financial accuracy, compliance, and timely support to project execution at CSIR.





Kavyashree P

CS (Inter), B.Com.
Assistant Section Officer
Finance & Accounts Division
E-mail : kavyashree.p@csir.res.in



Ms. Kavyashree has been handling a wide range of responsibilities in the Finance & Accounts domain, with significant experience in pension as well as project accounting functions. Her work includes pre-audit and settlement of pension cases, authorization and issue of Pension Payment Orders (PPOs), settlement of retirement gratuity and death gratuity cases, commutation of pension, and monthly reconciliation of pension debit and credit scrolls received from banks, along with their entry in the AMS software. She manages restoration of commuted pension after 15 years through regular coordination with banks and pensioners, maintains pension payment registers, ensures stoppage of pension or family pension wherever required, audits and passes pensioners' medical bills, and has created and entered data of nearly 1,500 pensioners in the CSIR Accounts Manager Software.

Up to 31 March 2025, she has also been responsible for auditing and passing purchase files and bills under P-50, auditing and processing bills and stipend claims relating to HCP, MLP, MMP, FTTP, NCP, and NWP projects, and auditing library bills under the P-50 Library budget. Her duties further include maintaining project ledgers, monthly reconciliation of subsidiary records with the AMS software, creation of new projects in AMS in coordination with PBMD, processing all payments and receipts through CSIR AMS, clearing UTNs in PFMS and CSIR-NAL OB software, booking and removal of OB/LC, processing adjustment bills and bank debit/credit advices, reconciliation of capital, revenue, and LC advances with the AMS balance sheet, maintenance of LC registers, preparation of updated LC advance statements, and monitoring availability of funds and budget for each project.



Navya N Shastry

B.Com., CS Executive, "Praveen" in Hindi
Junior Secretariat Assistant
Finance & Accounts Division
E-mail : navya.shastry@nal.res.in



Ms. Navya N Shastry, serves as a Junior Secretariat Assistant in Finance & Accounts, She handles a broad spectrum of financial and administrative functions, including concurrence of estimations, justifications, comparative statements, contracts, bills, and security deposit refunds relating to P-50 Works & Services, P-701 and P-702 Staff Quarters Maintenance, and P-06 Laboratory Maintenance.

Her responsibilities include auditing and passing GPF withdrawal and advance bills, maintaining monthly GPF ledgers, and preparing final settlement cases of retirees, VRS, and deceased employees, along with monthly recoupment and remittance statements for submission to CSIR Headquarters. She also manages record maintenance, remittance of Labour Welfare Cess, monthly NPS subscriptions through CRA and NSDL portals with regular compliance and oversight reporting, processing of long-term advances such as HBA, PC, and conveyance, clearing No-Due Certificates, and carrying out all other duties assigned by senior officers with efficiency, accuracy, and dedication.



Safala P

M.Sc. Physics
Assistant Section Officer
Finance & Accounts Division
E-mail : safala.p@csir.res.in



Ms. Safala P is working in the Finance & Accounts Division of CSIR-NAL, and her portfolio includes payment on various kinds of bills on a daily basis. Her responsibilities include maintenance of cash book for transactions related to a) SBI, b) TSA, c) CNA/ AMS; Vouchering bills in TSA/SBI AMS cashbook and to voucher all receipts, maintenance of TSA assignment, reconciliation of all payment of receipts, monthly closure of cashbook and tally with AMS, preparation of cash reconciliation statement and submitting to CSIR Head Quarters on a monthly basis. Her duties further include issue of DD, cheque, authorization letter and payment to statutory authorities; providing payment information to hospitals, vendors and employees and supervision of maintenance of paid vouchers.



Sanjana Venkateswaran

B.Tech (Civil Engineering)
Section Officer
Finance & Accounts Division
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Ms. Sanjana serves as a Section Officer in the Finance & Accounts Division, where she handles key financial and administrative responsibilities. Within a year of joining, she has been entrusted with the charge of the P04 Budget Head, encompassing miscellaneous and contingency expenditures. Her role includes managing essential service provisions such as electricity, water, procurement of medicines, etc., ensuring efficiency, compliance, and continuity in operations.

She is also responsible for the administration of the pension head, including processing of superannuation and family pension cases, as well as medical reimbursement claims. Her work involves careful scrutiny and timely disposal of cases, contributing to the financial security and welfare of the retired employees and their dependents. In addition, she serves as the Convener of the Canteen Committee, overseeing canteen operations with a focus on quality, hygiene, and responsiveness to staff needs. She carries out her responsibilities with diligence, accuracy, and a strong sense of accountability, demonstrating a commitment to financial propriety and employee welfare.



Veena R R

Diploma (Commercial Practice), B.A. (Public Admin)
Assistant Section Officer
Finance & Accounts Division
E-mail : rveena.nal@csir.res.in



Ms. Veena joined CSIR–NAL in 2001 as a Junior Stenographer in the Information Management Division, where she rendered dedicated secretarial and administrative support for over two decades. Her responsibilities includes managing official correspondence, coordinating departmental activities, maintaining revolving funds, following up on purchase files and payments, and assisting in the organization of seminars, conferences, and exhibitions at the Knowledge and Technology Management Division (KTMD) until March 2022. In March 2022, she transitioned from the Secretarial Cadre to the Finance & Accounts Cadre on her promotion as Assistant Section Officer in the Finance & Accounts Division.

In her current role, she is involved in auditing and processing various bills such as pay and allowances, medical reimbursements, leave travel concessions, children education allowances, travelling allowances, earned leave encashment, and Assessment Promotion Arrears for Administrative, Group II, and Group III staff, along with maintaining salary audit registers. She also maintains statutory I-Remittance Registers for Income Tax and GST, manages recoupment registers, and undertakes reconciliation of payments under her portfolio.

A major highlight of her service was her active involvement in CSIR-NAL's Golden Jubilee Celebrations (2008–2010), where she supported all aspects of conference management and financial closure. Another notable achievement during 2022–2025 was the recovery of an outstanding recoupment of ₹4 crores, reducing the balance to ₹8 lakhs through persistent follow-up. In recognition of her contributions, she received the CSIR–NAL Outstanding Performance Award 2024–25 under "Excellence in Finance & Accounts."

Stores & Purchase



Anusha Manonmani T

B.Tech. (Electrical & Electronics Engineering)
Junior Secretariat Assistant
Stores & Purchase
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Ms. Anusha Manonmani is dealing with procurement activities pertaining to ADK, DO, F&A, GB (Stores), S&P, STTD, QAD, PBMD, ICAST, TE, LPC files of ACD, Health Centre, Medical (Rate Contract and LPC) divisions. Receipt of Indents and allocation of File numbers, making necessary entries in control register.Placing the Indents before the Purchase Committee (up to Rs.25.00 Lakhs) and Technical Purchase Committee's (above Rs.25.00 Lakhs) for recommendation of MoP. Preparation of Tender Document and hosting it on the GeM and CPP Portal.Receipt and opening of bids, preparation of comparative statement and sending the file to respective Indenting Officers, for scrutiny and recommendation. Sending Negotiation meeting letter, wherever recommended.

Preparing Purchase Proposals and placing the file before the respective committees. Preparation of Purchase Order through ACCESS.Preparing Manual Purchase Orders for both Indigenous and Import. On receipt of Stock certified Invoices, generating bill through AMS and sending the file to F&A Section for making payment. Updation of file status in PFMS.Maintaining and updation of various registers viz., Control register, Purchase Order (both Import and Indigenous) resigisters, LC registers and BG registers. Preparing monthly and quarterly statements and sending it to Vigilance Section.Cleared outstanding OB's pertaining to the year 2009-2023 valuing approx. Rs.53.12 Crore. Prepared Amendment for PO's, Delivery extension letters, BG confirmation letters, Corrigendum to tenders, LD forms, etc., wherever required.Created files and prepared notings in E-Office.Any other work assigned from time to time.

She was awarded III prize in Speech – on the Topic: Articles of Indian Constitution and Women Empowerment (Dr. B.R. Ambedkar Birth Anniversary Celebration).Consolation prize in Pen a Picture (Women's Day Celebration 2025).

Lab Attendant



Menaga Sundari V

Bachelor of Physiotherapy
Lab.Attendant - 1
Health Centre
E-mail : vmes2014@gmail.com



Ms. Menaga Sundari V serves as Lab Attendant (1) at the Health Centre of CSIR–NAL, where she diligently performs the responsibilities of a Physiotherapist with dedication, professionalism, and compassion. She is committed to delivering patient-centered rehabilitative care, ensuring quality outcomes through clinical expertise and empathetic engagement.

In her role, Ms. Menaga begins each consultation by carefully reviewing the physician's prescription and medical advice. She prioritizes building patient confidence by offering reassurance and motivation, fostering a positive and supportive therapeutic environment. She conducts detailed assessments by obtaining comprehensive medical histories, including prior illnesses, surgeries, injuries, and present complaints. Based on thorough clinical evaluation, she formulates and implements individualized physiotherapy treatment plans aligned with medical recommendations.

Her key responsibilities include assessing physical conditions and identifying functional limitations related to muscles, joints, nerves, posture, and balance. She provides structured exercise therapy to enhance strength, flexibility, endurance, and mobility. Her therapeutic interventions include manual therapy techniques such as joint mobilization and soft-tissue manipulation, as well as electrotherapy modalities including Ultrasound, TENS, IFT, and heat or cold therapy. Through these evidence-based approaches, she works to alleviate pain, reduce inflammation and stiffness, prevent further injury, and promote functional recovery.

Ms. Menaga offers pre-operative and post-operative rehabilitation care and educates patients on posture correction, ergonomics, and home-based exercise programs to ensure sustained improvement. She diligently monitors patient progress and maintains accurate clinical and treatment records. Her scope of care encompasses musculoskeletal disorders such as back and neck pain, arthritis, and joint stiffness; sports injuries; neurological conditions including stroke, paralysis, and Parkinson's disease; pediatric conditions such as cerebral palsy and developmental delays; geriatric mobility and balance issues; and cardiopulmonary rehabilitation for patients recovering from cardiac surgery or managing chronic lung diseases. Ms. Menaga carries out her duties with sincerity, integrity, and unwavering commitment. As a dedicated healthcare professional, she takes pride in contributing meaningfully to the healthcare support system and upholding the values and reputation of CSIR-NAL.



Nurse



D Padmavathi

B.Sc. (Nursing)
Nursing Sister
Health Centre
E-mail : padmavathi@nal.res.in



Ms. Padmavathi is working as a Nursing Sister with over 23 years of service at the Health Centre division of NAL. She has extensive experience in orthopaedics and general medicine, providing care in both inpatient and outpatient settings.

She delivers a high standard of medical care consistent with physician orders and established treatment standards, and works collaboratively as part of an integrated, multidisciplinary healthcare team. She fosters a supportive and compassionate environment for employees, pensioners, and their dependants, providing both physical and psychological support. She serves as a primary source of medical information and education, guiding patients on medical conditions, treatment procedures, and preventive care, particularly in cases of chronic ailments. She regularly monitors patients' health conditions and baseline parameters, including vital signs and ECG, and maintains accurate and up-to-date health records. Her clinical responsibilities include administering injections, initiating IV lines, performing dressings for injuries, providing nebulization for asthmatic patients, assisting doctors in minor surgeries, suturing wounds, and conducting emergency diagnostic tests such as RBS as per physician directives. She is also responsible for dispensing medications safely and accurately in accordance with prescriptions and institutional protocols.

Ms. Padmavathi manages the preparation of indents for insulin and other essential drugs based on patient needs and consumption trends, maintains stock records, ensures proper storage conditions, and monitors expiry dates to prevent shortages and wastage. She also maintains accounts of medical items such as injections and linen, and oversees the preparation and sterilization of dressing materials. She is experienced in administering insulin injections to diabetic patients and educating them on the proper use of insulin pens as per medical advice. She strictly follows health and safety guidelines, ensures proper disposal of biohazardous waste, and maintains a clean, organized, and safe working environment in compliance with regulatory standards, while adhering to infection control policies. She coordinates patient care with specialists, including cardiologists, by effectively managing appointments, referrals, and communication. She works efficiently both independently and as part of a team, providing technical support and assisting doctors as required. She plays a key role in emergency care by assisting doctors in attending to critical cases and facilitating patient transfer to hospitals. She also attends emergency cases at residential quarters, provides treatment for injuries occurring after office hours, performs wound dressing at home clinics, and administers injections to patients at their residences who are unable to visit the Health Centre, including after regular working hours.



Multi Tasking Staff



Lakshmi Devi R

Graduation
Multi Tasking Staff
Stores & Purchase
E-mail : lakshmi.r@nal.res.in



Ms. Lakshmi Devi, Joined CSIR-NAL on 27th July 2004 as MTS and was posted in Administration having 21 years of experience in this organization.

She is involved in Movement of Files and documents from Purchase Section (K) to various Division in Kodihalli Campus, Dispatch of RFQs, Purchase Orders and Letters, Submitting documents to SBI and collecting documents from SBI, Arranging for Tea/Snacks for the meetings, Assist Tender Opening Committee in case of offline tenders, Collecting documents from Reception, Entering payment details in the Bill Register after Files are received from F&A Section., and Any other work assigned by SPO and CoSP from time to time.



Sunija S

SSLC, DMLT
Multi Tasking Staff
Health Centre
E-mail : ssunija7@gmail.com



Ms. Sunija serves as Multi-Tasking Staff at the Health Centre of CSIR–NAL , where she functions in the capacity of a Laboratory Technician, delivering accurate, timely, and high-quality laboratory services that directly support patient care and clinical decision-making. She performs her duties with a strong sense of ownership, accountability, and professional ethics.

Reporting punctually at 8:30 a.m. each day, Ms. Sunija ensures the smooth commencement of laboratory operations, minimizing patient waiting time and maintaining workflow efficiency. She accords special priority to critical investigations such as Dengue testing and Complete Blood Count (CBC) with platelet counts, recognizing their importance in urgent and potentially life-saving clinical interventions. During periods of high workload and cohort testing, she maintains efficiency and accuracy, ensuring timely processing and reporting to facilitate prompt medical management.

A core component of her responsibilities involves blood sample collection in strict adherence to standard operating procedures, with utmost regard for patient safety, dignity, comfort, and confidentiality. She adopts a compassionate and reassuring approach, ensuring that procedures are conducted gently and efficiently, thereby fostering patient trust and confidence. Ms. Sunija is responsible for accurate labeling, processing, and preparation of samples for investigations including hematology, biochemistry, serology, and clinical pathology. She performs laboratory tests using validated methodologies and calibrated instruments, ensuring reliability and precision of results. She strictly follows quality control measures, laboratory safety standards, and biohazard disposal protocols while maintaining comprehensive documentation.

In addition, she undertakes routine calibration and preventive maintenance of laboratory equipment such as analyzers, centrifuges, and pipettes to ensure uninterrupted services. Her active participation in the CMC Vellore External Quality Assurance Scheme (EQAS) reflects her commitment to maintaining nationally recognized quality standards. Beyond routine responsibilities, she supports organizational health programs, screening camps, and public health initiatives. Through discipline, teamwork, and resilience, Ms. Sunija continues to contribute meaningfully to the healthcare support system and upholds the values and reputation of National Aerospace Laboratories with dedication, compassion, and integrity.



Thank You



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CSIR-National Aerospace Laboratories

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