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★ **CSIR Technology Awards 2020**



Business Development and
Technology Marketing



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For Successful Commercialization of Composite
Technology Towards Light Combat Aircraft (LCA) –
Tejas IOC series Production.

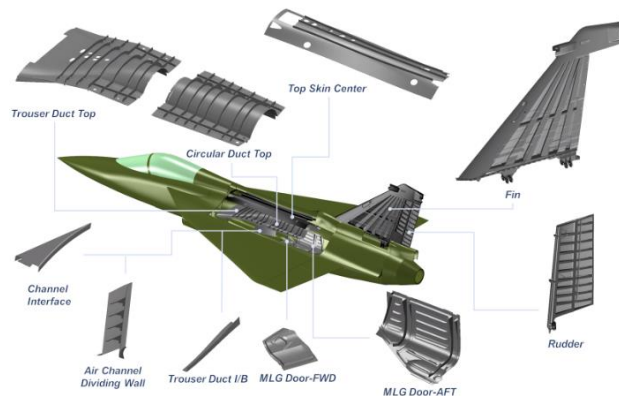


CITATION

CSIR-NAL was mandated to develop Advanced Composites Technology for the Light Combat Aircraft (LCA-Tejas) with the support from ADA in 1990's because of strategic technology denials. NAL developed in-house technology and played a stellar role in the realisation of Technology Demonstrators (TD), Prototype Versions (PV), and Limited Series Production (LSP) culminating in Series Production (SP) aircrafts. NAL developed 165 parts for the LCA program and transferred the manufacturing technology for 152 parts to HAL in 2005. Subsequently, NAL took upon the challenge of streamlining various manufacturing processes for the remaining 13 critical complex cocured parts to meet standards of series production. NAL executed an order of 20 sets of composite parts with the production partner M/s Tata Advanced Materials Limited (TAML) while meeting the stringent quality requirements of regulatory authorities. This has led to a follow up order of 20 sets with more in the pipeline. This is **testimony** to the successful commercialization of composite technology developed by NAL. The **Cocuring Technology** developed by CSIR-NAL for LCA-Tejas has resulted in a **40% reduction in the part count, 50% reduction in the number of fasteners, 30% reduction in the assembly time and weight reduction of 20%**. An investment of about Rs.100 crores has led to a foreign exchange saving of over Rs.3000 crores.

For this outstanding achievement, CSIR-NAL is being conferred the **'Technology Award for Business Development & Technology Marketing, 2020'**.

Successful Commercialization of Composite Technology Developed by CSIR-NAL Towards LCA-TEJAS IOC Series Production



Advanced Composites Division | CSIR-National Aerospace Laboratories | Bangalore

Complex Cocured Components Developed by ACD-CSIR-NAL.

1. Contributors

Sl. No	Name of the Employee	Designation	Div
a) Program Management			
1	Dr. Ramesh Sundaram	Chief Scientist & Head ACD	ACD
b) Project Coordinator (Technical)			
2	Shri. Ravi Kumar P	Sr.Principal Scientist	ACD
3	Shri. Sudheendra HN	Chief Scientist (Retd)	ACD
c) Project Coordinators (Management & Commercial)			
4	Dr.Sridhara Murthy S	Chief Scientist (Retd)	KTMD
5	Dr Mathur JS	Chief Scientist & Head KTMD	KTMD
6	Shri.Raghvendra V Maralihalli	Chief Scientist	KTMD
7	Shri.Durgesh Burde	Principal Scientist	KTMD
d) Project Leaders			
8	Shri. Gaddikeri Kotresh	Sr. Principal Scientist	Centre Fuselage
9	Shri. Dinesh BL	Sr.Technical Officer - 3	
10	Shri. Govindan Kutty MG	Principal Technical Officer (Retd)	MLG doors
11	Shri. Saravana Kumar N	Sr.Technical Officer -2	
12	Shri. R Chidambaram	Technical Assistant	
13	Shri. Neelakante Gowda MN	Sr.Principal Scientist (Retd)	Fin Assembly
14	Shri. Satish S Nimbale	Principal Scientist	
15	Shri. Rawat RS	Principal Technical Officer (Retd)	Rudder Assembly
16	Shri. Karuppannan D	Scientist	
e) Design Team			
17	Dr. Byji Varughese	Sr.Principal Scientist	ACD
18	Shri. Polagangu James	Principal Scientist	ACD
19	Shri N Lohith	Principal Scientist	ACD
20	Shri. Naik BN	Principal Technical Officer	ACD
21	Shri. Senthil Nathan K	Sr.Technical Officer -2	ACD
22	Shri Giridharan A	Sr. Technical Officer -1	ACD
23	Shri. Rajesh Kumar S	Technical Officer	ACD
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25	Shri Paranthaman N	Technical Assistant	ACD
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27	Dr Saji D	Sr.Principal Scientist, Dy.Head QA	ACD

Sl. No	Name of the Employee	Designation	Div
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29	Dr. Anil Kumar A	Principal Scientist	ACD
30	Shri.Emayavaramba Moorthy MV	Sr.Principal Scientist (Retd)	ACD
31	Shri Indra Kumar	Principal Technical Officer (Retd)	ACD
32	Shri. Raju BM	Sr.Technical Officer-2	ACD
33	Shri. Dasmal Baskey	Sr.Technical Officer-1	ACD
34	Shri. Shadakshari KS	Sr.Technician-1	ACD
35	Shri.Pichuka Madhu Babu	Sr.Technician-1	ACD
36	Shri. Dharanendra Y	Technician-1	ACD
g) Non-Destructive Testing of Composites			
37	Shri. Srinivasa V	Sr.Technical Officer-3	ACD
38	Shri Suresh Chand Jangir	Sr.Technical Officer - 1	ACD
39	Shri. Kali Kiran S	Sr.Technician-1	ACD
h) Composite Part Manufacturing Team			
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41	Shri Pitchai.P	Sr.Technical Officer - 3	ACD
42	Shri. Murali.P	Sr.Technical Officer - 2	ACD
43	Shri Radhakrishnan G	Sr.Technical Officer - 2	ACD
44	Shri. Patil Vinayak	Technical Officer	ACD
45	Shri. Padmakara,G	Technical Officer	ACD
46	Shri. Naveen Kumar,M	Technical Officer	ACD
47	Shri. Athimoolaganesh S	Technical Officer	ACD
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50	Shri. Rathnakar,B	Technical Assistant	ACD
51	Shri. Doreswamy,K.N	Sr.Technician-2	ACD
52	Shri Ramanna Gundad	Technician-1	ACD
53	Shri. Murthy,B.Y.K.	Sr.Technician-2	ACD
54	Shri. Ganesh,B.R	Sr.Technician-2	ACD
55	Shri. Dharmappa. BL	Sr.Technician-2	ACD
56	Shri. Kiran P	Sr.Technician-1	ACD
57	Shri. Thippeswamy K	Technician-2	ACD
58	Shri. Margan A	Lab.Assistant	ACD
59	Shri. Prabhakaran D	Lab.Attendant-1	ACD

60	Shri. Chandrashekar R	Lab.Attendant-1	ACD
Sl. No	Name of the Employee	Designation	Div
i) Composites Processing Support			
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62	Shri Bhaskar B.K	Sr.Technician-2	ACD
63	Shri. Dhinakaran K	Technician-2	ACD
j) Metallic part Machining & Metrology			
64	Dr Ravi Shankar S	Chief Scientist & Head, APMF	APMF
65	Shri. Pradeep MS	Principal Technical Officer	APMF
66	Smt. Radha BR	Sr.Technical Officer - 3	APMF
67	Shri Naresh KR	Sr.Technical Officer - 1	APMF
68	Shri. Punitha SJ	Technical Officer	APMF
k) Coupon Level Testing			
69	Shri. Siva M	Technical Assistant	ACD
70	Shri. Kailash Singh	Sr.Technical Officer - 1	ACD
l) Structural Testing for Qualification of First Article			
71	Dr Raja S	Chief Scientist, Head, STTD	STTD
72	Dr Sathyanarayana CN	Chief Scientist, Joint Head, STTD	STTD
73	Dr Chandra N	Principal Scientist	STTD
74	Shri. Mahesh M	Technical Assistant	STTD

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