



CSIR - Central Electronics Engineering Research Institute



CSIR Industry Meet 2019





Technologies Glance



INNOVATE



President Ram Nath Kovind with Union Minister Harsh Vardhan admires a device to check milk adulteration invented by CSIR. (PTI)

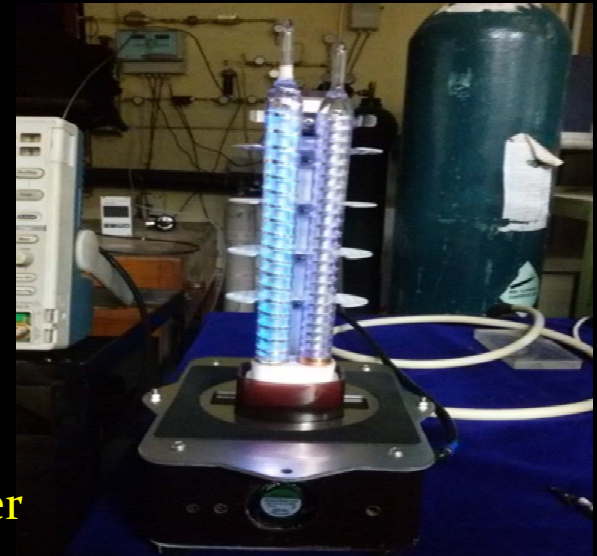
Ksheer Tester

DEVELOP



Hand held Milk FAT Tester

DELIVER



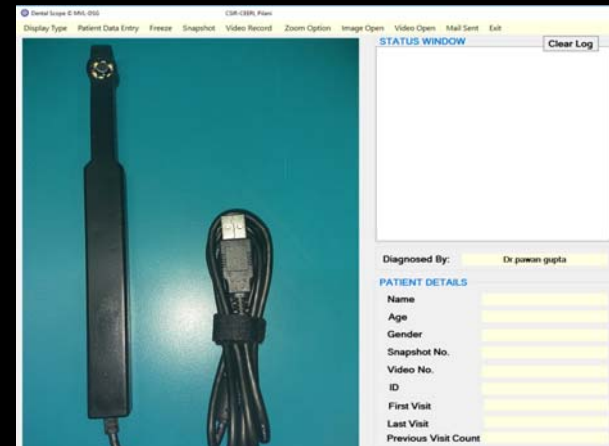
Mercury Free Plasma UV-Lamp



IoT enabled Solar Tree



Rapid Milk Analyser



3D Dental Endoscope



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**Aquaculture
(Smart Pond Management)**



**Bacteria free Eco-friendly
fresh air unit for Hospital
and Clean Rooms**

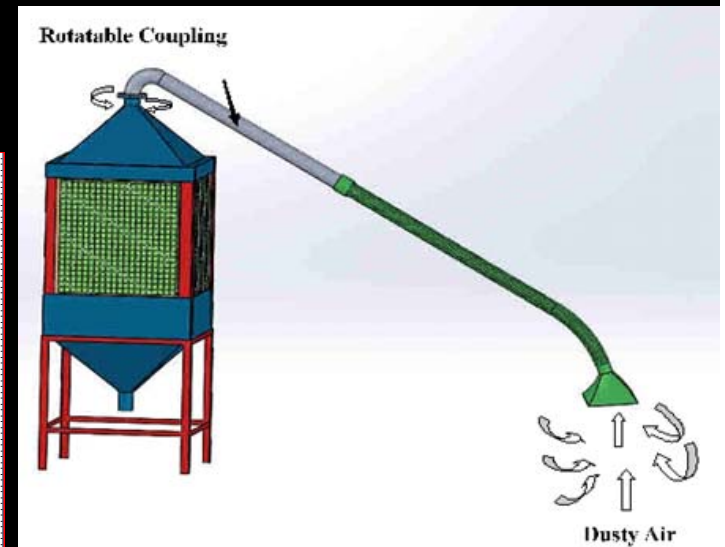
Methodology, Results and Prototypes

Developed Multi-Screen Android App

Real-Time Data on Web-dashboard

Major Applications:

- RO Plant status monitoring, RO Plant membrane health prediction.
- On line RO plant Water Quality monitoring and measurement.



**Smart dust precipitator
system for single stone
carving artisan**



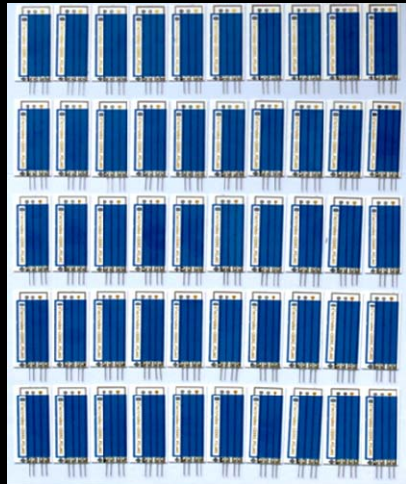
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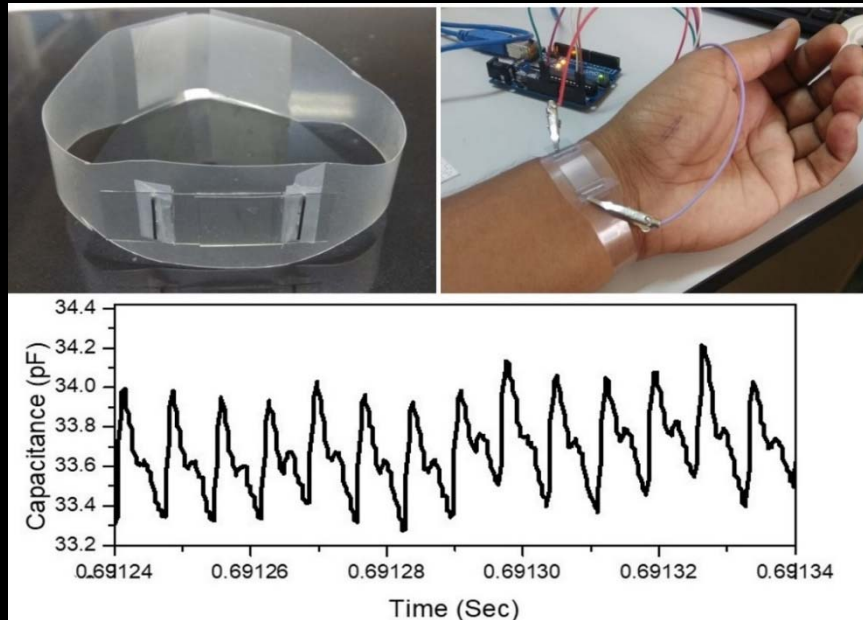
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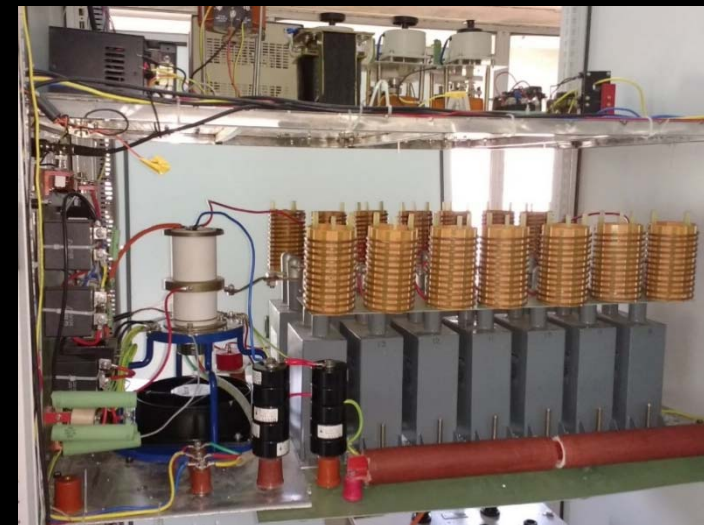
Thick Sensor Electrode



**Tunable Pulse Magnetron
2.6 MW S-Band & 3.0 MW**



Thick Sensor Electrode



Thyratron



Viable Technologies for MSME



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S.No.	Technology	Application Areas
1.	Development of 3D rigid and flexible Endoscope for Dental Examination	For Dentists, Dental and other Oral (Mouth) Applications
2.	Ksheer Scanner	For Adulteration Detection in Milk
3.	Handheld Milk Fat Tester	Fat Detection in Milk (Handheld)
4.	Handheld Ksheer Tester	For Adulteration Detection in Milk (Handheld)
5.	Acoustic Milk Analyser	To check Composition of Milk
6.	Thick Film Integrated microfarming unit	For Microfarming in Cold areas
7.	Dual energy X-ray image analysis technique for material discrimination	At Airport and other Secured places for Material Scanning & discrimination
8.	MEMS based accelerometer	Accelerometer Applications (in Mobile devices)
9.	IoT enabled smart solar tree	Solar Tree for Renewable Power across Highways and other areas with Sensors for Remote monitoring



Technology Partners (Collaborative R&D)



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- Samsung
- Cognizant
- LG India
- Nvidia



Technology Partners (StartUps/MSMEs)



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- M/s Rajasthan Electronics and Instruments Limited (REIL), Jaipur
- M/s Stayfresh, Navi Mumbai
- M/s Spectrum Industries, Mangalore
- M/s YOUWE (UV). Purifier, Jaipur
- M/s Arkin Techno. Pvt. Ltd., Pune
- M/s Tereso Ventures Pvt. Ltd., Pune
- M/s Krystalvision Image Systems Pvt. Ltd., Pune
- M/s Macwin India, New Delhi
- M/s Alpine Technologies, Surat
- M/s Parappadi Technologies Pvt. Ltd., Thiruvananthpuram
- M/s Star Rising Energy Pvt. Ltd., Jaipur



Technologies Ready for Take up



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	Technology	TRL Status
TRL 9 —	1 Handheld Ksheer Tester	TRL-6
TRL 8 —	2 Acoustic Milk Analyser	TRL-5
TRL 7 —	3 Handheld Milk Fat Tester	TRL-5
TRL 6 —	4 Development of 3D rigid and flexible Endoscope for Dental Examination	TRL-5
TRL 5 —	5 Smart Breath Analyzer for the detection of Blood Alcohol Concentration (BAC (%))	TRL-4
TRL 4 —	6 Bacteria Free Eco-Friendly Fresh Air Unit for Hospitals and Clean Room	TRL-3
TRL 3 —	7 Thick Film Integrated Microfarming Unit	TRL-5
TRL 2 —	8 Solar PVT Cogeneration System	TRL-4
TRL 1		



Technologies Ready for Take up



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	Technology	TRL Status
TRL 9 —	9 Dual energy X-ray image analysis technique for material discrimination	TRL-5
TRL 8 —	10 Mercury free plasma UV lamp for efficient Water Disinfection	TRL-3
TRL 7 —	11 Development of Gas Sensor (MEMS)	TRL 4 - NH ₃ , H ₂ S TRL 3 - CO
TRL 6 —	12 High Frequency RF MEMS Capacitive Switches	TRL-4
TRL 5 —	13 MEMS based accelerometer	TRL-5
TRL 4 —	14 Development of software for real time monitoring of milk supply chain	TRL-4
TRL 3 —	15 IoT enabled smart solar tree	TRL-5
TRL 2 —	16 Mercury free plasma UV lamp for Air Purification	TRL-3
TRL 1		



Technology Translation & BD Initiatives



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Common Research and Technology Development Hub (DSIR-CRTDH)

CRTDH facility has been setup for testing Solar based appliances, IoT based Systems & Real-time embedded systems



CRTDH



Design Engineering facility



Grid tied inverter test facility



(Technology Dissemination Facility)
Artificial jewellery coating unit



Technology Translation & BD Initiatives



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Innovation-cum-Incubation Hub (IIH):

Incubation facility has been setup in partnership with NRDC

- 7 Incubates placed at Jaipur Centre
 - 3 Incubates are exploring CSIR-CEERI developed technologies



CSIR-CEERI Jaipur Centre



Seminar Hall



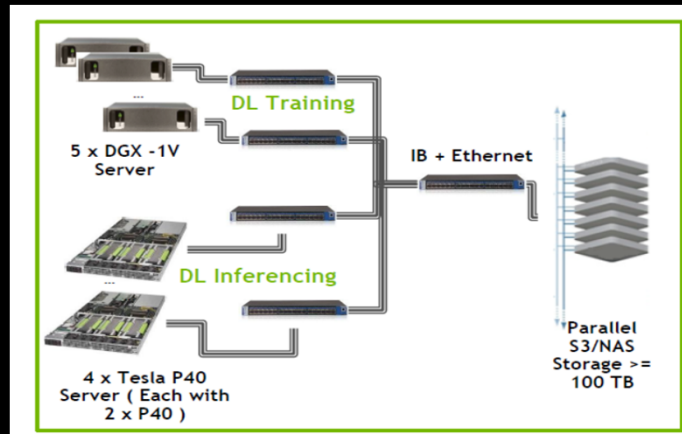
IIH



Video Conference Facility

Delhi Centre:

- Setup Centre of Excellence in AI
- Cluster of 5 DGX-1 machines with combined computing capability of 5 petaflops to support DL & other AI applications





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Thanks..