





The Science OF MAKING...

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TECHNICAL ACHIEVEMENTS

INDIGENOUS DEVELOPMENT OF A 28 V DC HIGH-CURRENT PUMP STARTER

CMTI's Aerospace Laboratory has successfully developed an indigenous prototype of a 28 V DC, 250 A-class MOSFET-based pump starter/driver for Electric Motor Driven Pump (EMDP) applications in aerospace test rigs.

Designed for high-current operation with low conduction voltage drop, the system integrates power and control sections incorporating current sensing, overcurrent and short-circuit protection, and temperature monitoring and protection.

The prototype has successfully demonstrated operation during bench testing at currents of up to 210 A, marking a significant milestone towards the indigenous development of high-current DC power-control systems for aerospace test facilities.



PROTOTYPE CONTROL BOARD AND HIGH-CURRENT MOSFET POWER MODULE DURING BENCH TESTING.

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SEMINARS/VISITS

CMTI TEAM CONDUCTS THIRD-PARTY FACTORY INSPECTION OF SUBMERSIBLE BOREWELL PUMP MANUFACTURERS UNDER GANGA KALYANA YOJANA



3rd Party inspection of submersible pumps at various locations

CMTI team comprising Mr. Arun Kumar J G, Joint Director & Group Head – PDE; Mr. Pavan N, Scientist-D, PDE; and Mr. Bhoothesh S E, Technician-III, PAT, visited various submersible pump manufacturing facilities across Gujarat, Bengaluru and Davangere to conduct third-party inspections. The inspections were carried out as part of the factory evaluation process for manufacturers shortlisted for the supply of submersible borewell pumps under the Ganga Kalyana Yojana, implemented by the D. Devaraj Urs Backward Classes Development Corporation (DBCDC), Government of Karnataka.

The team evaluated a total of eight manufacturing facilities, assessing their capabilities and suitability for the proposed supply. Following the inspections, a comprehensive evaluation report was prepared and submitted to the concerned authorities.

CMTI SCIENTISTS CERTIFIED AS FLUID POWER PROFESSIONALS – LEVEL 2

Mr. Pavan N, Scientist-D, PDE, and Mr. Kumarswami, Scientist-D, PAT, attended an 8-day Advanced Course on Hydraulic Systems, jointly organised by the Fluid Power Society of India (FPSI) and M/s Yuken India Pvt. Ltd., Bengaluru, from 7-15 October 2026.

Upon successful completion of the course and qualifying the prescribed evaluation, both scientists were awarded the certification of “Fluid Power Professional – Level 2”, recognising their advanced knowledge and competency in hydraulic systems.


8 Day Advance training Course on Hydraulic Systems
@ Yuken India Limited, Bangalore

CMTI SCIENTISTS PARTICIPATE IN BIS SEMINAR ON AI AND AUTOMATION IN LABORATORY ACTIVITIES

Mr. Narendra Reddy (Scientist-D & Group Head, Smart Manufacturing Cell, C-SMPM), along with Mr. Bishnu Prasad Sahu (In charge – Business Development Team) and Mr. Krishna Mohan (Technical Officer A), participated in a seminar on “AI and Automation in Laboratory Activities”, organised by the Bureau of Indian Standards (BIS) at its Bengaluru Branch Laboratory on 9 October 2026.





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As part of the programme, Mr. Narendra Reddy delivered a technical talk on “Industry 4.0 & Smart Manufacturing: Introduction, Frameworks and its Industrial Deployments”, highlighting the key concepts, enabling frameworks and practical applications of Industry 4.0 and smart manufacturing technologies across industrial sectors.

BUSINESS INITIATIVES/MOUS

CMTI Signs MoU with Alterspan Pvt. Ltd., Ahmedabad

CMTI and M/s Alterspan Pvt. Ltd., Ahmedabad, Gujarat, entered into an MoU on 5 October 2026 to undertake collaborative research activities for the benefit of the medical device and advanced manufacturing sectors.





CMTI Signs MoU with wbk Institute of Production Science, Karlsruhe Institute of Technology (KIT), Germany

On 8 October 2026, CMTI and the wbk Institute of Production Science, Karlsruhe Institute of Technology (KIT), Germany, signed an MoU to establish a collaborative framework for research and development in the field of Advanced Manufacturing, with a particular focus on addressing the technological challenges faced by industries in India.





HORIBA INDIA PVT. LTD. VISITED CMTI TO EXPLORE CMTI’S ADVANCED TECHNOLOGICAL CAPABILITIES

A team from HORIBA India Pvt. Ltd. visited CMTI on 12 October 2026 to explore the Institute’s state-of-the-art facilities and indigenous technological developments. During the visit, the team showed keen interest in several advanced technologies developed by CMTI, opening avenues for potential technological collaboration and future industry engagement.

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EVENTS/CELEBRATIONS

CMTI HOSTS INDUSTRY DIALOGUE ON THE INDO-GERMAN CENTRE FOR INTELLIGENT MANUFACTURING ALONGSIDE ENGINEERS' DAY CELEBRATIONS



On 8 October 2026, CMTI organized an "Industry Dialogue on the Indo-German Centre for Intelligent Manufacturing" in the presence of the distinguished guests: Prof. Dr.-Ing. Gisela Lanza, Member of the Executive Board of the wbk Institute of Production Science at Karlsruhe Institute of Technology (KIT), Germany; Dr. Lucas Bretz, General Manager of the Global Advanced Manufacturing Institute (GAMI), Germany; and Mr. Moritz Hörger, Research Associate at the wbk Institute of Production Science at KIT, Germany, along with Dr. Nagahanumaiah, Director, CMTI.

The event witnessed the participation of more than 30 industry representatives, who engaged in meaningful interactions with the distinguished guests, exchanging perspectives on emerging trends, technological advancements, and industry-specific challenges in intelligent manufacturing.

The meet provided a valuable platform for strengthening Indo-German industry–academia–research collaboration and exploring opportunities for future cooperation in advanced manufacturing.

Adding to the significance of the occasion, CMTI celebrated Engineers' Day on the same day, with Prof. Dr.-Ing. Gisela Lanza from KIT, Germany, gracing the event as the Chief Guest.

As part of the celebrations, a series of fun-filled and engaging activities were organised for the young engineers of the Institute, including EngiAct – An Engineering Charades Challenge, Engineers' Poetry, and an Engineering Quiz. These activities provided an opportunity for participants to showcase their creativity, technical knowledge, teamwork and enthusiasm beyond their regular engineering pursuits.

The celebrations concluded with the recognition of the winners, who were felicitated with prizes and certificates in appreciation of their enthusiastic participation and achievements.













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TRAINING PROGRAMMES

CMTI CONDUCTS EXCLUSIVE TRAINING PROGRAMME ON INDUSTRY AUTOMATION FOR BEL, BENGALURU

CMTI organised a four-day exclusive training programme on “Industry Automation” for Bharat Electronics Limited (BEL), Bengaluru, from 12-15 October 2026, with 20 participants. The programme, coordinated by Mr. Raghu Kodi (Scientist-D), covered key aspects of industrial automation, including PLC programming, industrial sensors and instrumentation, HMI and SCADA, industrial communication protocols, safety systems, machine vision, and Industry 4.0 frameworks and applications.



The training combined expert-led technical sessions, hands-on exercises, live demonstrations and CMTI laboratory visits, providing participants with practical exposure to modern industrial automation technologies and smart manufacturing solutions.

UPCOMING EVENTS

1. “Microscopy & Analysis – SEM, AFM, STM, Confocal Microscope, Optical Profiler, etc.”, Course Code:2304, from: 18 – 20 November 2026 at CMTI, Bengaluru.
   Click for more information
2. “Laser-Based Material Process & Applications”, Course Code:4202, on 18 December 2026 at CMTI, Bengaluru.
   Click for more information

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