

# THE SCIENCE OF MAKING...

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## NEW INITIATIVES



### BALL SCREW LEAD ERROR MEASURING FACILITY

CMTI has established a state-of-the-art Ball Screw Lead Error Measuring Facility, extending its precision metrology capabilities to measure ball screws in compliance with ISO 3408 standards. This facility can accommodate ball screws with diameters ranging from Ø4 to Ø125 mm and lengths up to 4000 mm, with a system accuracy of  $(1.3 \mu\text{m} + 2.0 \times 10^{-6} \text{ L})$ . It offers comprehensive measurement capabilities, including travel variation over the useful path, travel variation over 300 mm, travel variation over one pitch or lead, and quality grade evaluation. With these advanced features, the facility enables high-precision inspection and evaluation of ball screws for diverse industrial applications.



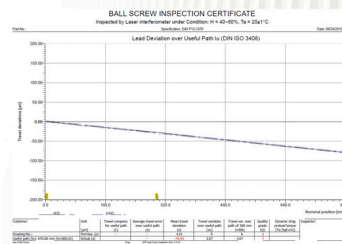
“Precision Metrology  
has extended its  
capabilities to  
measure Ball Screw  
as per ISO 3408”

#### Specifications:

Measurable Ball Screw diameter:  
Ø4 to Ø 125 mm  
Measurable Ball Screw length:  
Upto 4000 mm  
System Accuracy:  
 $(1.3 \mu\text{m} + 2.0 \times 10^{-6} \text{ L})$

#### Measurement Capability

Travel Variation over Useful Path  
Travel Variation over 300mm  
Travel Variation over 1 Pitch or Lead  
Quality Grade Evaluation



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## AWARDS & RECOGNITIONS

### EXCELLENT PERFORMANCE AWARD FOR CMTI BY HAL, LUCKNOW

CMTI has been honoured with the Special Appreciation - Excellent Performance Award for Indigenisation of Aerospace Stores during the Industry Partners Business Meet 2025, organised by HAL, Accessories Division, Lucknow (UP).

The Aerospace Laboratory at CMTI, a Centre of Excellence for Aerospace Product Development & Testing, has been at the forefront of supporting indigenous development and qualification testing of Aircraft Hydraulic LRUs for HAL, Lucknow.



### CMTI'S CONTRIBUTION FEATURED IN "AEROMAG ASIA"

CMTI's contribution towards SIATI Awards Celebrating Indigenisation and Innovation in Aerospace and SIATI's initiative on Cross-Border SME Engagement with Japan have been published in Aeromag Asia, July–August 2025, Vol. 19, Issue 4.



## ACCREDITATIONS

### CMTI ACCREDITED AS PROFICIENCY TESTING PROVIDER BY NABL



CMTI has received an accreditation as a Proficiency Testing (PT) Provider as per ISO/IEC 17043: 2023 standard by NABL in the field of dimensional calibration, covering 18 PT items. The main assessment by NABL was conducted from 31 May to 1 June 2025, and CMTI was granted accreditation on 3 August 2025, which is valid up to 2 August 2029.





## EVENTS/ WORKSHOPS AT CMTI

### ➤ RASHTRIYA KARMAYOGI TRAINING PROGRAMME AT CMTI



As part of the Rashtriya Karmayogi Mission, also known as the National Programme for Civil Services Capacity Building (NPCSCB), CMTI organised a series of one-day training sessions on "Rashtriya Karmayogi" for all permanent employees. The sessions were conducted on 31 July, 4 August, 11 August, 18 August, and 28 August 2025 by Dr. Ajay Jaswal and Dr. Aravinda L S. The Rashtriya Karmayogi Mission aims to transform India's civil services into a competent, efficient, and citizen-centric workforce by emphasizing competency-based capacity building. Through the iGOT Karmayogi digital platform, the mission promotes continuous learning and development for government officials, thereby preparing a future-ready civil service capable of delivering high-quality public services and contributing to the vision of Atmanirbhar Bharat.,



## EVENTS/ WORKSHOPS ATTENDED

### ➤ PARTICIPATED IN HAL INDUSTRY PARTNERS BUSINESS MEET 2025

Mr. Tom Thampy, Scientist-E and Group Head of the Aerospace Laboratory, CMTI, participated in the HAL Industry Partners Business Meet 2025 held at Lucknow on 1 August 2025.

During the event, he presented the various activities of the Aerospace Laboratory and highlighted its significant role in the indigenisation of aerospace elements, showcasing CMTI's contributions towards strengthening self-reliance in aerospace technologies and the implementation of smart factory solutions.

### ➤ CMTI PARTICIPATION IN CURTAIN RAISER OF IMS 2025

On 2 August 2025, Mr. Krishna Rathod and Mr. Bishnu Prasad Sahu represented CMTI at the Curtain Raiser Programme of the Indian Manufacturing Show (IMS) 2025, held at Taj Yeshwanthpur, Bengaluru. The event, organised by Laghu Udyog Bharathi in collaboration with the Government of Karnataka, served as a platform to highlight the upcoming show's vision of advancing Indian manufacturing through innovation, technology, and industry collaboration.



### ➤ CMTI PARTICIPATION AT THE 14<sup>TH</sup> STRATEGIC ELECTRONICS SUMMIT 2025



CMTI took part in the 14<sup>th</sup> Strategic Electronics Summit (SES) – Defence & Aerospace, held on 7–8 August 2025 at the Bangalore International Exhibition Centre, organised by ELCINA. Mr. Harsha S, Scientist-D and Group Head, STDC, contributed as a panellist in the session on "Sensors for Defence Applications", where he presented CMTI's initiatives and expertise in strengthening indigenous defence technologies.



Mr. Tom Thampy and Mr. Bishnu Prasad Sahu also represented CMTI, engaging with key stakeholders from the defence, aerospace, and electronics sectors. The summit provided a platform to showcase CMTI's capabilities and to discuss emerging opportunities and challenges in the field of strategic electronics.



## CMTI REPRESENTATION AT DRAFTSIGHT EVENT

Mr. Ankur Bhardwaj, Scientist-B, attended an event titled "DRAFTSIGHT – The Smarter CAD for Business Growth" organised by M/s. Beacon India on 12 August 2025 at Hotel Leroy Grand, Bengaluru. As part of the programme, he actively participated in a quiz competition and won a prize, bringing recognition to CMTI.



## PARTICIPATION IN WEBINAR ON ADDITIVE MANUFACTURING IN AEROSPACE

On 13 August 2025, Mr. Bishnu Prasad Sahu attended a webinar on "Additive Manufacturing and Advanced Materials in Aerospace", organised by Meshmix Media Pvt. Ltd. in partnership with the IMS Foundation and Laghu Udyog Bharati, Karnataka. The session highlighted the emerging role of advanced materials and additive manufacturing technologies in shaping the future of aerospace innovation and industry competitiveness.

## CONTRIBUTORY TALKS

### EXPERT SESSION ON CALIBRATION AND GD&T AT V.V.P. ENGINEERING COLLEGE, RAJKOT



On 2 August 2025, a special expert session was organised for the Mechanical Engineering students of V.V.P. Engineering College, focusing on the calibration of instruments and the fundamentals of Geometric Dimensioning and Tolerancing (GD&T). The session was delivered by Mr. Abhishek Suchak, Scientist-C, CMTI

Regional Centre, who shared his expertise and provided students with valuable practical insights into these essential concepts. The event witnessed enthusiastic participation from over 120 students across the 3rd, 5th, and 7th semesters, reflecting their keen interest in learning beyond the classroom curriculum. The session enabled students to develop a deeper understanding of how calibration and GD&T play a pivotal role in ensuring precision and quality in the mechanical industry. The students and faculty of V.V.P. Engineering College expressed their heartfelt gratitude to Mr. Abhishek Suchak for his time, effort, and commitment in enriching their knowledge and inspiring them towards practical excellence in engineering

## MOUS/NDAS

### CMTI SIGNS NDA WITH M/S MOLEX INDIA BUSINESS SERVICES PVT. LTD.

CMTI and M/s. Molex India Business Services Pvt. Ltd., Bengaluru, have entered into an NDA in connection with "Assess and Evaluate the possibility of Mutually Benefits into Business Opportunity." This collaboration aims to explore collaborations between the two organisations and identify avenues for future industry-oriented engagement.



## PUBLICATIONS

Verma, B., & Deepa, R. (2025). Thermogram processing in optical active thermography: a review of deep learning and conventional techniques. *Infrared Physics & Technology*, 106048.

## TRAINING INITIATIVES

### TRAINING PROGRAMME ON NON-DESTRUCTIVE TESTING

CMTI organised a two-day training programme on "Non-Destructive Testing (NDT)" from 5 to 6 August 2025. Coordinated by Mr. Champuri Srinivasa Rao, Scientist-D, the programme commenced with an introduction to NDT, followed by in-depth sessions on the Principles of Liquid Penetrant Testing (PT), Magnetic Particle Testing (MT), Ultrasonic Testing (UT), and Radiographic Testing (RT), along with their industrial applications. Practical demonstrations of PT, MT, UT, and RT film reviews were also conducted to provide hands-on exposure. Expert sessions were delivered by Mr. Champuri Srinivasa Rao and Mr. Satish Pattar, with industry insights shared by the Trinity NDT team, Peenya. The training concluded with an interactive session involving all faculty members, enriching participants with both theoretical knowledge and practical understanding of modern NDT techniques.



### TRAINING PROGRAMME ON MICROSCOPY AND ANALYSIS



CMTI conducted a three-day training programme on "Microscopy & Analysis: SEM, AFM, STM, Confocal Microscope, Optical Profiler, etc." from 4-6 August 2025. Coordinated by Mr. Murugan A, Scientist-C, the programme included insightful sessions on Scanning Probe Microscopy (AFM & STM), Raman and FTIR Spectroscopy, Scanning Electron Microscopy (SEM), Confocal Microscopy, Optical Profiling, and Metallurgical Analysis by Microscope. Participants gained valuable hands-on experience through demonstrations and lab visits, guided by expert faculty. The training concluded with an interactive session consolidating theoretical and practical learnings, enabling participants to better understand the applications of advanced microscopy techniques in research and industry.

## UPCOMING TRAINING PROGRAMMES

- "Advanced Material Testing", Course Code: 1306, from 2–3 September 2025
- "Advanced Robotics", Course Code: 2202, from 8–9 September 2025
- "Design and Analysis of Experiments for Micro System Design and Processes", Course Code: 3101, from 8–10 September 2025
- "Additive Manufacturing", Course Code: 5201, from 10–12 September 2025



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