

**KARUNYA INSTITUTE OF TECHNOLOGY AND SCIENCES**

(Deemed-to-be University under section 3 of the UGC act 1956)

Karunya Nagar, Coimbatore – 641 114.

**DEPARTMENT OF MECHANICAL ENGINEERING**  
**CENTRE FOR RESEARCH IN METALLURGY (CRM)**

The centre for Research in Metallurgy was established in the year 2012. Its vision is to impart knowledge on material science and engineering to the student community, carryout quality and ethical research in the field of materials and material processing engineering, help the industries in solving problems that they face in metallurgy and related areas through consultancy services and lend a helping hand for students across the country in completing their project related to materials and materials processing.

The centre is equipped with modern materials testing and materials characterizing equipment such as Metallurgical microscope with Image analyzer, Pin-on-disk wear monitor, Microhardness tester, Ultrasonic flaw detector, Tensile testing machine, Four ball tester and specimen preparation setup. The centre also encourages collaborative research work with other Institutions, Universities and Industries.

**Facilities available for research, consultancy and testing:**

- ▶ Metallurgical Microscope
  - Image acquisition and Image analysis
- ▶ Microhardness Tester
  - CRT display, Output using a printer
- ▶ Wear & Friction Monitor System (POD Machine)
  - Computer interface, Dry sliding wear, Wet sliding wear, High temperature wear, Abrasive wear
- ▶ Stir Casting Facility

- Automatic retraction mechanism, Motorized stirrer arrangement, Maximum temperature: 1200° C
- ▶ Specimen preparation facilities
  - Twin disk Polisher and Motorized cutter
- ▶ Tensile Testing Machine
  - Fully automated, computer integrated tensile testing machine, 25kN capacity.
- ▶ Ultrasonic Flaw Detector
  - for testing welded and cast samples.
- ▶ Four Ball Tester
  - To Determine Wear Preventive properties (WP), Extreme Pressure properties (EP) and friction behavior of lubricants , load carrying capacity of lubricant or grease , coefficient of friction of lubricant, anti wear properties of lubricating oils & grease

### **Thrust areas of research and consultancy:**

- Metal Matrix Composites
- Particle reinforced composites
- Hybrid Metal Matrix Composites
- Solid state welding Processes and allied processes
- Lubricant properties - Wear Preventive properties (WP), Extreme Pressure properties (EP) and friction behavior of lubricants.

### **Contributions of CRM**

- International Publications/Presentations.
- Testing and Consultancy.
- Research projects (External & Internal)
- International Internships are being provided.

## PHOTO GALLERY



**Metallurgical Microscope**



**Computerized Tensile Testing Machine**



**Wear and Friction Monitor**



**Microhardness Tester**



**Stir Casting Furnace**



**Four Ball Tester**



**Twin Disc Polishing Machine**



**Abrasive Cutting Machine**

**Faculty In-charge**

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Professor

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**Technicians**

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