



IIT Kharagpur



Our CoE has been established receiving support from *Department of Heavy Industry, Govt. of India*, & a consortium of top industries to drive innovative & advanced research for manufacturing industries.

Estd. in **2018**

Dedicated in providing **industrial solutions**

Visioning to become a **Manufacturing Catapult** in TRL 4-6



INDUSTRY PARTNERS

एच.ई.सी.



TATA STEEL



TATA MOTORS



TATA CONSULTANCY SERVICES

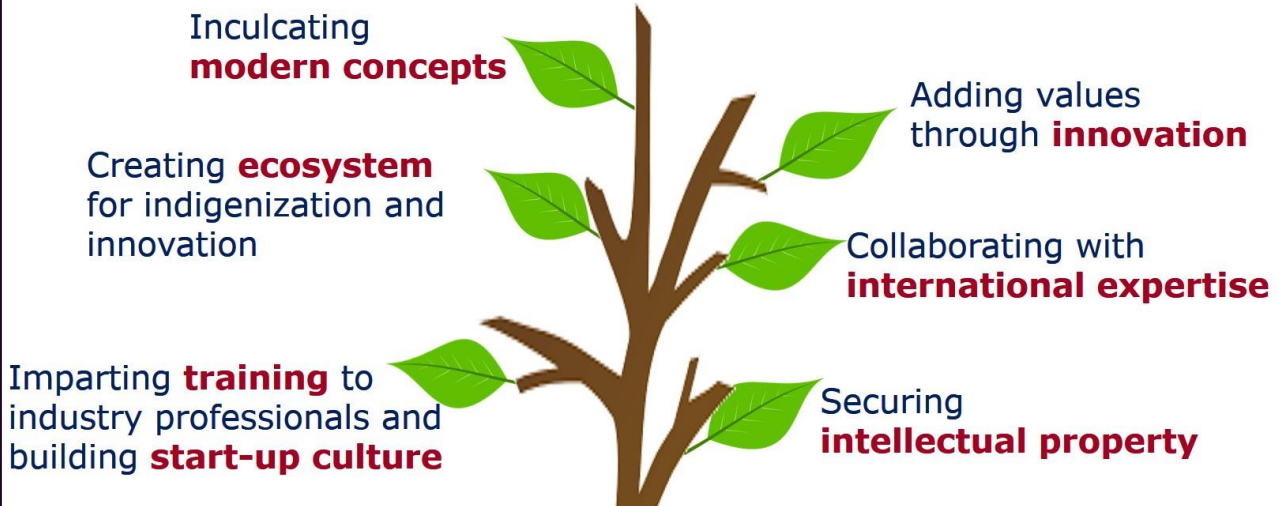


TATA SONS

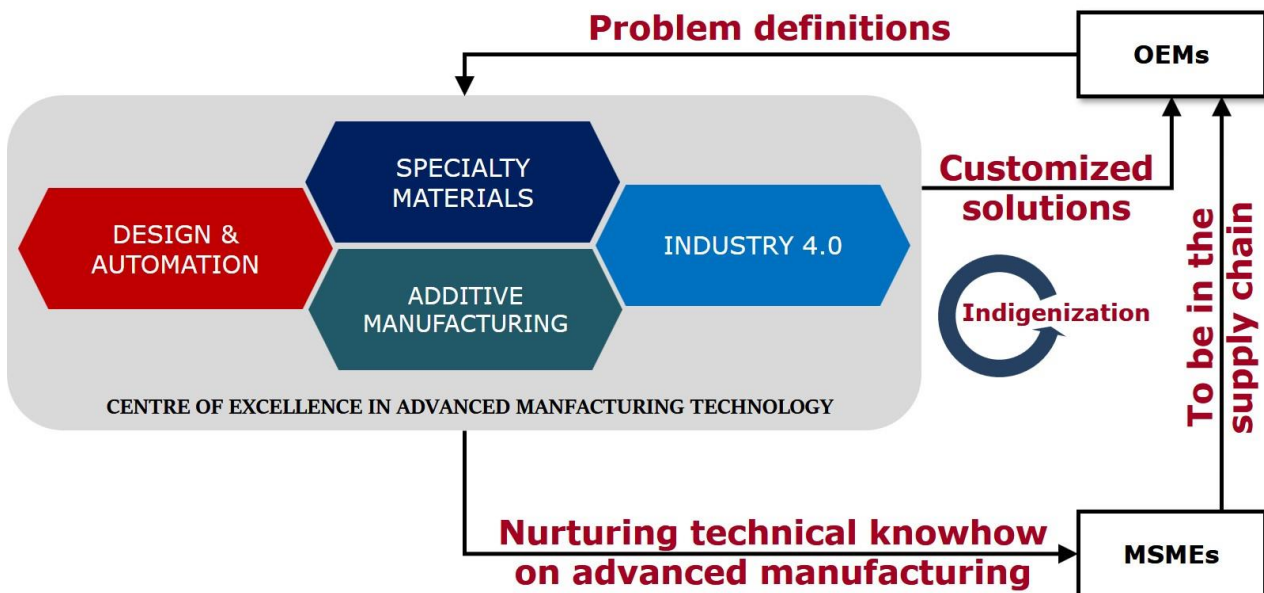


HIPL Beyond innovations

VISION & MISSION



ECOSYSTEM

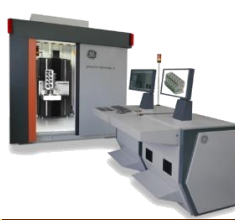




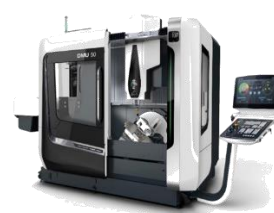
5-axis metal hybrid additive manufacturing



Industry 4.0 compliant robotic friction stir welding



450 kV CT-scan with large scanning area (Upcoming)



Full 5-axis CNC machining centre



UTM with non-contact video extensometer



Computer integrated manufacturing



Foundry-robot



CNC turning centre



Submerged type 5-axis CNC wire-cut EDM



Robot-assisted structural vibration testing



Industry 4.0 compliant robotic welding cell for :

- MIG welding
- TIG welding
- Spot welding
- 6 kW Laser welding and cladding (Upcoming)

Our **Innovation Laboratory** is a common engineering platform for all **Industry partners, MSMEs, and Start-ups.**



1 provides fast-tag solutions to MSMEs for adopting modern technology

2 eureka moment of entrepreneurs can be felt receiving access of our facilities

3 overall promotion of start-up culture

SPECIALTY MATERIALS

Study on non-metallic inclusions in steel products

एच.ई.सी.



ADDITIVE MANUFACTURING

- Fabrication of industrial components through additive manufacturing
- Study on usage of raw materials for additive manufacturing



INDUSTRY 4.0

- Real-time monitoring and control of manufacturing processes
- Developing digital twin
- Application of IoT in supply chain management



DESIGN AND AUTOMATION

Automated robot-based manufacturing



PROGRAMMES CONDUCTED

1. Short-term course on "Composites 4.0", Aug 20-23, 2019



Speakers in the programme:

- ✓ Airbus India
- ✓ TATA Autocomp Systems
- ✓ Composites World
- ✓ University of Southwales
- ✓ University of Nottingham
- ✓ IIT Kharagpur

Participants :



- Research scholar
- Industry professional

2. One-day workshop on "Metallography", Sep 20, 2019



Organized jointly by :
Struers & CoE in AMT

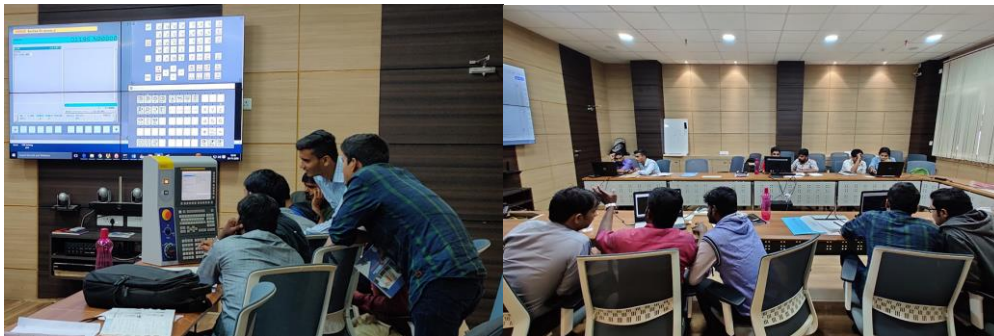
Lecture sessions by
renowned Metallographer,
George Vander Voort

Participants :



- Research scholar
- Industry professional
- Faculty

3. "3-weekend training programme on CNC", Nov 16-17, 23-24 & 30-Dec 1, 2019

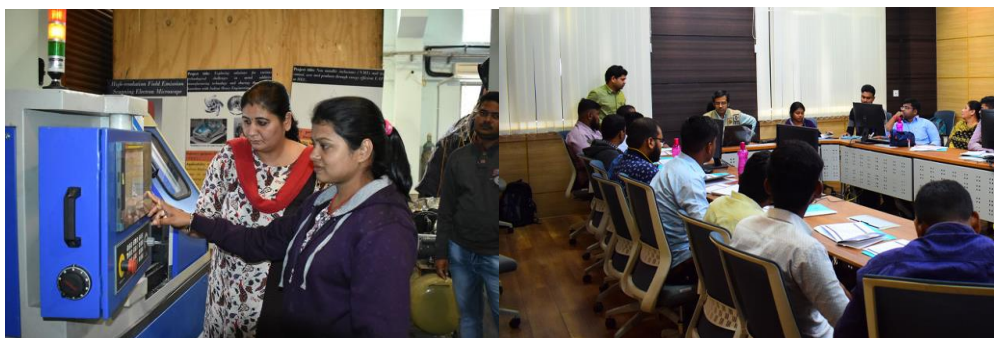


Participants :



- Research scholar
- Industry professional
- Faculty

4. "Training programme on CNC", Feb 17-21, 2020



Participants :



- Research scholar
- Industry professional
- Faculty
- Undergraduate
- Diploma

UPCOMING PROGRAMMES

Online training programme on CNC

Advanced welding techniques

Industrial robotics

AR/VR in manufacturing

Industry 4.0

Instrumentation

AI in manufacturing

ACHIEVEMENTS of CoE

Patent 1

A multi-sensor based system for real-time monitoring, prediction, & control of weld quality in friction stir welding process (Jointly with Tata Consultancy Services)



Hindustan Times

IIT- Kharagpur develops novel Industry 4.0 tech for advanced manufacturing sector

ABP EDUCATION.COM

Innovation by IIT Kharagpur and TCS to usher new trends in advanced manufacturing sector



Dr. Ramesh Pokhriyal Nishank @DrRPNishank · Oct 28, 2020
Prof. Surjya K Pal of @iitkgp in association with @TCS has developed a novel Industry 4.0 technology for remotely controlled factory operations & real-time quality correction during industrial production in India's advanced manufacturing sector.
Great job!

Patent 2

Method and system for multi sensor fusion using transform learning (Jointly with Tata Consultancy Services)

Patent 3

Low-cost industry 4.0 solution for quality inspection

DATAQUEST

IIT Kharagpur Researchers Develop Low-cost Artificial Intelligence-enabled Industry 4.0 Software for Real-time Inspections

Business Standard

IIT KGP devices AI-based system to inspect quality of MSME goods

Hindustan Times

IIT KGP devices AI-based system to inspect quality of MSME goods



Dr. Ramesh Pokhriyal Nishank @DrRPNishank · Dec 6, 2020
.@IITKgp has developed an #AI-based solution for real-time metrological inspection. The software can be deployed in the production line to check the quality of jobs. @IITKgp has filed a patent & made the innovation available for #MSMEs to license.

Innovative solution

Algorithm developed to boost profit in India's manufacturing sector (Jointly with Tata Metaliks & Tata Sons)

DATAQUEST

IIT Kharagpur and Tata Metaliks jointly develop predictive maintenance algorithm to improve profitability of production jobs

INDIA TODAY

IIT Kharagpur and Tata Metaliks jointly develop algorithm to boost profits in India's manufacturing sector



Dr. Ramesh Pokhriyal Nishank @DrRPNishank · Dec 15, 2020
Researchers at @IITKgp have developed an algorithm to boost profits in the #manufacturing sector. Their module has been successfully tested by #Tata Metaliks for user-level acceptance.



Reach us :

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