SMART Foundry

Intensive Certificate Course with Expert Lectures and Hands-on Sessions

Day	Forenoon (Interactive Lectures by Domain Experts)	Afternoon (Lab Sessions)
1	Computer-aided tooling design; Methoding (feeding & gating); Process simulation (metal flow & solidification)	*AutoCAST-X1 and FLOW+*
2	3D printing technology for patterns; Rapid metal casting (melting & direct pouring); 3D scanning for inspection	*ProtoCenter and Melt-IT*
3	Process data analytics for defects; Cooling curve analysis for properties; Online resources for education & training	*E-Foundry and Analytics*

The course is designed and delivered by the SMART Foundry Consortium faculty from the following institutes: CSIR National Institute of Interdisciplinary Science & Technology, Trivandrum | Central Mechanical Engineering Research Institute, Durgapur | Charotar University of Science & Technology, Anand | DKTE Society's Textile & Engineering Institute, Ichalkaranji | Government College of Engineering, Pune | B H Gardi College of Engineering and Technology, Rajkot | Indian Institute of Technology Bombay, Mumbai | Jadavpur University, Kolkata | SGGS Institute of Engineering and Technology, Nanded | Visvesvaraya National Institute of Technology, Nagpur.

Sri Krishna College of Engg and Technology, Coimbatore, 15-17 July 2016

SMART Foundry Course, Sri Krishna College of Engg. and Technology, Coimbatore, 15-17 July 2016

Smart Manufacturing or Industry 4.0, is changing the way products are manufactured by a network of small firms, using information and communication technologies in an environmentally sustainable manner.

Enabling technologies include 3D Scanning, 3D Printing, Smart Sensors, Internet of Things, Big Data Analytics, and Multi-Physics Simulation. These are now available and fairly affordable to even small companies, allowing them to successfully compete with larger and global companies.

Smart manufacturing leads to consistent quality coupled with better utilization of manufacturing resources like materials and energy. Further, smart technologies allow distributed manufacturing, leading to smaller scale remote production closer to end-users, providing employment opportunities as well as better fulfilment of user needs.

SMART Foundry 2020 is a consortium of institutes across India, developing a low-cost table-top system for rapid production of small metal parts. 3D printers are used to fabricate plastic patterns, then chemically-bonded molds, which are inserted below a furnace for direct pouring. Metal flow and solidification is simulated and optimized to ensure 'right first time'. Cooling curves from embedded thermocouple sensors help predict mechanical properties. The team is partnering with other institutes to spread the knowledge about smart manufacturing.

Target Participants: The course is meant for all those interested in smart manufacturing, including teachers, researchers and industry professionals. Prior exposure to digital technologies and metal casting is desirable, but not essential. Learning pedagogy builds upon the successful 'Casting Design and Simulation' courses conducted at IIT Bombay during 2000-2010, and 'E-Foundry' workshops conducted all over India during 2011-2015, which have benefitted over 2000 participants.

Course Fees: Rs. 6000 for participants from industry
Rs. 5000 for participants from academia

Fees cover:

- ✓ Access to lectures and lab sessions
- ✓ High quality printed course material
- ✓ Working lunch, tea and refreshments
- ✓ Certificate of participation

Participants also get an opportunity to discuss with course faculty regarding best practices for teaching, lab building, research projects and industrial consultancy. They must make their own arrangements for travel and stay.

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Supported by the Institute of Indian Foundrymen, Coimbatore Chapter

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