

## ABOUT IIT MADRAS

The Indian Institute of Technology Madras, established by the Government of India in 1959, is among the foremost of Institutes in India and abroad in higher technical education with fundamental and applied research. It has been ranked the top engineering institute in India for last four years (2016-2019) in a row with NIRF rank 1 by Ministry of Human Resources Development, India. The Institute is located in a lush green forest covered the land of about 250 hectares in South Chennai. The presence of eminent automobile manufacturing units and allied industries proves to be conducive to its research atmosphere. It has about 565 faculties, 8300 students, and 700 administrative and supporting staffs working in various departments and centres.

## ABOUT THE DEPARTMENT

The Manufacturing Engineering Section (MES) has started its journey in 1965 under the Department of Mechanical Engineering. This section is now equipped with state-of-the-art facilities for teaching, training, research and development, and industrial consultancy in various aspects of manufacturing. The facilities available in the section encompass conventional, unconventional and advanced manufacturing technologies. These are grouped under Machine Tool Laboratory, Computer Aided Design (CAD) Laboratory, Computer Aided Manufacturing (CAM) Laboratory, Robotics, CIM Laboratory, Micro Machining and Metrology Laboratory. Since its inception, emphasis has been on practical and industrially relevant developmental activities. The facilities in the section have been augmented with support from Ministry of HRD, Government of India, Indo-German Projects, and Sponsored Projects from various Governmental Agencies and Industries.

**Last Date for Registration: 15th July, 2019**

**Registration Fee (including 18% GST):**

Faculty Members: 5,000 /-

R & D Institutions and Industry: 10,000/-

Research Scholars: 3,500/-

Foreign Students: USD 150

Foreign faculty: USD 250

**Only Limited Number of Seats**

**Reserve your seat**

### Payment Details

**Account Name** : CCE IIT Madras  
**Account Number** : 36401111110  
**Bank Name** : State Bank of India (SBI)  
IIT Madras branch,  
Chennai, India  
**SWIFT Code** : SBININBB453  
**Bank IFSC Code** : SBIN0001055  
**TAN Number** : CHE304464F  
**Service Tax  
Registration  
Number** : AAAAI3615GSD001

It may be noted that IIT Madras is exempted under section 10(23c) (iii) ab) of the Income Tax Act and as such no tax need to be deducted at source.

**Payment should be done through NEFT/ RTGS and send the proof of payment.**

**Register here**

### **Address for Communication**

**Prof. G. L. Samuel**

Coordinator SMM

Manufacturing Engineering Section  
Department of Mechanical Engineering  
Indian Institute of Technology Madras  
Chennai-600036

Phone: 04422574699/ 09444468251

Email: [samuelgl@iitm.ac.in](mailto:samuelgl@iitm.ac.in) / [smm@wmail.iitm.ac.in](mailto:smm@wmail.iitm.ac.in)

## International Workshop on **SMART MANUFACTURING AND METROLOGY**

**JULY 25 - 26, 2019**

**Venue:**

Hall III, IC&SR, Indian Institute of Technology Madras,  
Chennai-600036.



### **Co-ordinators**

**Dr. G. L. Samuel**

Professor

Manufacturing Engineering Section,  
Department of Mechanical Engineering,  
Indian Institute of Technology Madras  
Chennai – 600036

**India**

and

**Dr. Satish T S Bukkapatnam**

Rockwell International Professor

Director, TEES Institute for Manufacturing Systems  
Department of industrial and systems engineering,  
Department of mechanical engineering,  
Texas A and M University,  
College Station, Texas  
USA

**Theme:**

Smart machine tools are the key elements envisioned for the concept of smart manufacturing. The concept of smart machine tools can be categorized as the most fascinating area where a numerous funding has been invested for the economic growth of nations. The realization of the conceptual smart machine tool models and smart inspections can be achieved by the incorporation of well-equipped highly intelligent devices and a strong IT backbone. The current era has already witnessed numerous drastic alterations creating flexibility in the production line leading to a paradigm shift from the traditional manufacturing unit for the exponential growth of national revenue. This can be realized with the integration of various sub systems including sophisticated software for machine learning, big data analytics, artificial intelligence and neural networking. To evaluate the applicability of the conceptual models of smart machine tool models for numerous industrial units in India, the collaborative workshops with US research group will helpful by providing technical expertise with suggestions with various case studies, interactive sessions and panel discussions with industry experts. Knowledge sharing on various aspects of smart sustainable machine tool will be advantageous for both the nation which will cover various sub areas/units including manufacturing plant integration, IIOT of robots, smart and cost-effective adaptive control for automation, cloud computing with big data analysis, concept of industry 4.0, virtual manufacturing units and sophisticated robots and sensor units. All these open forum discussions will help in building up a roadmap for the successful and effective implementations of smart machine tools which can address various aspects of Industry 4.0 relevant to Indian and US context at the organizational level, infrastructure considerations, skills sets required, and cost implications.

**Objectives:**

To foster advanced research and education programs focusing on capabilities related to next generation manufacturing and inspection.

To provide an overview of smart automation which explores the idea of implementing Industry 4.0 with smart sensing and online and in-process Metrology.

To encourage the young potential researchers from the both countries to bring out novel concepts that can create revolutionary changes in the manufacturing industries.

To establish an open forum for examining and evaluating the ongoing technical advancements in smart manufacturing by overviewing certain predominant industrial case studies both from India and US.

To build up a unique platform to provide valuable feedbacks/suggestions in upgrading the existing technology in order to nurture higher productivity with minimum conservation of energy.

**Course Contents:**

Broad topics to be addressed through expert lectures:

- ❖ Smart machine tools for sustainable manufacturing.
- ❖ Intelligent Sensors.
- ❖ Industrial Internet Of Things (IIOT).
- ❖ Intelligent data analysis.
- ❖ Inprocess measurement systems
- ❖ Error Compensation
- ❖ Digital Metrology

**Speakers:**

The speakers are distinguished faculties from IIT Madras and Texas A and M University.

**Eligibility:**

Faculty members from Engineering Colleges, Institutes and Universities, R & D personalities from industries, and Research Scholars from India and Abroad.

**Boarding and Lodging:**

Limited accommodation is available for the participants at the Taramani Guest House, IIT Madras, on payment and first come first serve basis.

**Workshop**  
on  
**SMART MANUFACTURING AND METROLOGY**

**JULY 25 - 26, 2019**

**Registration Form**

Name (Mr/Ms/Dr/Prof) :  
SMM Registration ID :  
Designation :  
Office Address :

Tel. Office:                      Residence:  
Fax:                                      E-mail:  
Age : \_\_\_\_\_ Years  
Sex : Male / Female  
Highest Acad. Qualification :  
Professional Experience :  
Research Interest :  
Accommodation : Required/Not Required  
Payment Details :  
Amount: Rs. :  
Date:                                      Bank:

I agree to abide by the rules of SMM workshop. I shall attend the course for the entire duration.

Date: \_\_\_\_\_  
Place: \_\_\_\_\_                      Signature of Applicant

**Signature of Competent Authority**