



## Tidings

A biannual newsletter published by the School of Engineering, Indian Institute of Technology Mandi  
September 2017

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(Director, IIT Mandi)

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### Student Strength

■ PHD: 50  
■ MS: 17  
■ M.TECH: 10  
■ B.TECH: 141 (ME)  
■ B.TECH: 51 (CE)



### Chairperson's message...

Greetings!! It gives me immense pleasure to present the 4<sup>th</sup> issue of "TIDINGS". This newsletter is one of the ways in which we disseminate information relating to the School of Engineering of IIT Mandi. The last semester was full of various academic, extracurricular and R&D activities by the students and faculty members. As you read this newsletter, you will realize that the School had a particularly successful semester. Some of the achievements I would like to share. Mr. Nitesh Kumar 2<sup>nd</sup> year B. Tech (ME) student has won the Gold Medal (MS SL3) for India, at FZ Forza Irish Para-Badminton International 2017. School of Engineering did set-up many advanced research laboratories. Significant amount of external research funding was received. I would like to thank all my colleagues for their tireless efforts to help the school grow at a very steady pace.

**Rajeev Kumar, Chair, School of Engineering**

### New Faculty Members

**Dr. Sumit Sinha Ray** holds a Ph.D. from University of Illinois at Chicago. His research interests include Filtration and heavy metal removal, Thermal management of microelectronics, Nonwoven methodologies and their applications, Optical and thermal characterization, Drug delivery and Energy storage.

**Dr. Kasiviswanathan K S** holds a Ph.D. from IIT Madras. His research interests include Reservoir operation; Flood forecasting, Hydrologic Modeling, Multi objective optimization, Uncertainty and risk analysis and Geo spatial statistical data analysis.

**Dr. Subhamoy Sen** holds a Ph.D. from IIT Kharagpur. His research interests include Stochastic System Identification, Digital Signal Processing (DSP), Inverse problems, Kalman filtering, Bayesian updating, Structural Health Monitoring.

**Dr. Mousumi Mukherjee** holds a Ph.D. in Civil Engineering (Geotechnical) from IIT Kanpur. Her research interests include Geomechanics, Constitutive modeling of frictional material, material, Soil instability, Numerical Modeling and Non-destructive testing of soil.



### Faculty Achievements & Outreach

**Dr. Dhiraj V Patil** received IIT-DAAD Fellowship for exchange visit Karlsruhe Institute of Technology (KIT) Germany, 2017.

**Dr. Himanshu Pathak** received Albert Nelson Marquis Lifetime Achievement Award 2017.

**Dr. Rajaneesh Sharma** conducted a 1 day workshop on Concept Design on Ropeway System in association with DST and a local NGO.

**S. K. Saha, S. Bong and R. P. Dhakal**, "Contribution of Structural Wall and Frame Damage in Seismic Loss of RC Buildings", 12th International Conference on Structural Safety & Reliability (ICOSSAR 2017), Vienna, Austria, 6-10 August, 2017.

**S. Khakurel, R. P. Dhakal, S. K. Saha and T. Z. Yeow**, "Identification of Building Typology and Contributing Components to the Expected Seismic Loss" New Zealand Society for Earthquake Engineering (NZSEE) Annual Technical Conference. Wellington, New Zealand. April 27-29, 20.

### Student Achievements

**IIT Mandi B.Tech (EE) Student Mr. Nitesh Kumar has won the Gold Medal (MS SL3) for India at FZ Forza Irish Para-Badminton International 2017 on 25th June, 2017.** The tournament was held in National stadium at Dublin, Ireland from 22 to 25th June 2017. It was the 3rd episode of the tournament. Mr. Nitesh Kumar participated as a contingent member of Indian Para-Badminton Association. It is a very proud moment for our Country as well as for the whole IIT Mandi family.



**Ms. Manju Bisht** presented her research work at 26<sup>th</sup> International Conference on Discrete Simulation of Fluid Dynamics (DSFD-2017) at Erlangen, Germany

**Design Practicum Open House held on 21<sup>st</sup> May, 2017**

On 21<sup>st</sup> May 2017, IIT Mandi witnessed an exemplary demonstration of low cost technology prototypes for solving problems of society. These prototypes were developed by students as part of their Design Practicum course IC201P.



**Short Term course on Modeling and Simulation using Finite Element Method for Engineering Applications from 19th June to 23<sup>rd</sup> June, 2017.**

One week short Term Course on Modeling Simulation using Finite Element Method for Engineering Applications (MSFEMEA) was organised from June 19-23, 2017 at IIT Mandi. The short term course was inaugurated by Prof. Timothy. A. Gonsalves, Director, IIT Mandi. In inaugural speech, he highlighted the importance of modeling & simulation in engineering. Several experts delivered lecture on FEM connecting fundamentals to engineering applications.

**Speakers:** Dr. I. V. Singh, IIT Roorkee and several faculties from IIT Mandi. Faculties from School of Engineering are namely, Dr. Rajeev Kumar, Dr. Vishal Singh Chauhan, Dr. P. Anil Kishan, Dr. Rajesh Ghosh, Dr. Kaustav Sarkar, Dr. Himanshu Pathak, Dr. Sunny Zafar, Dr. Gaurav Bhutani and Dr. Subhamoy Sen.

### Visitors

**Prof. Anand Kulkarni** (Michigan Technological University, USA), **Prof S.P. Mahulikar** (IIT Bombay) and **Prof. Raja Banerjee** (IIT Hyderabad) visited IIT Mandi and offered 1 credit courses.

**Prof. S.L. Dhingra** (IIT Bombay) delivered a lecture on "Planning for Smart and Beautiful Cities with Sustainable Infrastructure.

**Mr. R. Sankara Kumar** (AMD, ARM Contracting, Bahrain) delivered an expert talk on Civil Engineering Contracts to students.

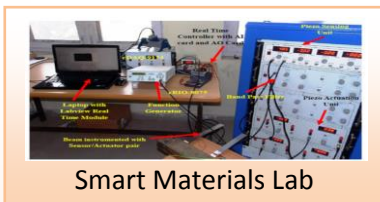
### Publications

**Till Date: 659**  
**Feb-July (2017): 30**

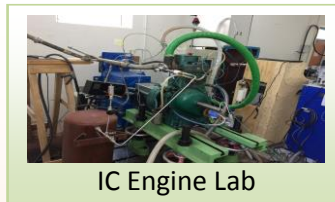
## Research Labs/Facilities at School of Engineering, IIT Mandi



Material Science Lab



Smart Materials Lab



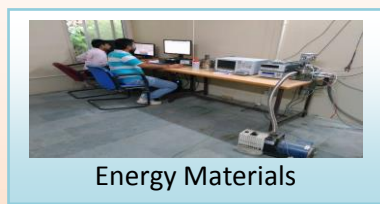
IC Engine Lab



Nanoscale Materials & Devices



Biomedical Mechanics



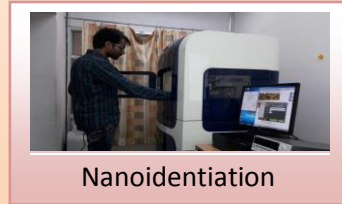
Energy Materials



Thermo Fluid lab



Vibration Lab



Nanoidentation



Mechanical Workshop



Acoustics Lab



Solar Energy lab

### Recently Commenced Projects

**Parametric study on pullout resistance of model micro-piles, by DRDO to Dr. Kala Venkata Uday (PI), Dr. Kaustav Sarkar (Co-PI) INR 9,95,900 2 years 13.03.17 to 12.03.19**

**Search of new semiconducting heusler alloys for high temperature thermoelectric applications by SERB to Dr. Sudhir Kumar Pandey, INR 19,08,940 (3 years)**

**Modelling of hydraulic diffusivity and its application in the FE simulation of moisture transport in concrete for assessing corrosion risk by SERB to Dr. Kaustav Sarkar, 45,89,260 (3 years)**

**Investigation of fluid and granular jet impact with erosion effects by SERB to Dr. Dhiraj V Patil INR 27,59,400 (3 years)**

**Development of nanostructured wear resistant microwave clads to minimise slurry erosion in hydro turbines by SERB to Dr. Sunny Zafar INR 53,30,750 (3 years)**

**Snow mapping & it's parameter estimation from geospatial (AVIRIS-NG) and field data by SAC-ISRO to Dr. Dericks P. Shukla INR 1, 00,000 (1 year)**

**Design and development of efficient solar assisted corrugated box dryer by Himachal Pradesh State council for Science, Technology & Environment (SCSTE) to Dr. Satvasheel Powar INR 8, 17, 000 (2 years)**

**Vetting of structural design for the extension of renovation of existing shed of Mela Ground IARI Pusa New Delhi to Dr. Rajneesh Sharma by CD-4 CPWD, IARI Pusa New Delhi. INR 2, 64,500 (2 months)**

**Traffic chakker at Sukhodi Khad Hospital Chowk Mandi to Dr. Rajneesh Sharma (PI), Dr. Kaustav Sarkar (Co-PI) by Executive Engineer, Mandi division II, HPPWD Mandi budget INR 1,49,500 for (6 months)**

**Sustainable waste water treatment through bio-photoelectro catalysis and bio production to Dr. Atul Dhar (PI),Dr. Rahul Vaish,Dr. Shyam Kumar Masakapalli,Dr. Aditi Halder,Dr. Tulika P Srivastava,Dr. Rik Rani Koner (Co PI's) by MHRD-IMPRINT INR 3,84,34,000 (3 years)**

**Suitability of higher modeling approach for reactive solute transport through heterogeneous porous medium: experimental and numerical study to Dr. Deepak Swami by SERB INR 42,74,600 (3 years)**

**New metal-organic networks as promising electro-active species for energy storage application: from materials developments to prototype fabrication to Dr. Rik Rani Koner by SERB INR 30, 51, 000 (3 years)**

**Development of aligned CNT-polymer nanocomposite for light weight and high strength body armor application by Azista Industries, Hyderabad to Dr.Viswanath Balakrishnan, INR 32, 78,600 (2 years)**

## School of Engineering, Indian Institute of Technology Mandi

