



Tidings

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Placements Sept. 17 to Jan. 18

VISITORS

Mahindra & Mahindra,
Capgemini, Addverb,
Timetooth, ISRO, LnT
ECC, LnT Ltd. Mumbai

56% of the eligible
students were placed

Student strength

Ph.D.: 56
M.Tech. (EEM): 12
M.Tech. (MES): 15
M.S.: 19
B.Tech. (CE): 70
B.Tech. (ME): 115

Faculty strength

Regular faculty: 28
Visiting professors: 2
Adjunct professors: 1
Mentor professors: 1

Chairperson's message...

Greetings!! It gives me immense pleasure to present the 5th issue of "TIDINGS". This newsletter is one of the ways in which we disseminate just previous semester's information relating to the School of Engineering (SE) of IIT Mandi. The last semester was full of various academic, extracurricular and R & D activities by the students and faculty members. I would like to share some of the achievements. Geotechnical and Structural Analysis Labs (UG) were operationalized and Thermo-Fluid Lab was upgraded. Advanced research laboratories i.e Biomechanics Research Lab, Building Physics and Advanced Material Mechanics Lab were established. FIST Project was awarded in Mechanical Engineering. I would like to thank all my colleagues for their continuous contribution in teaching, research and institute building.

Dr. Rajeev Kumar

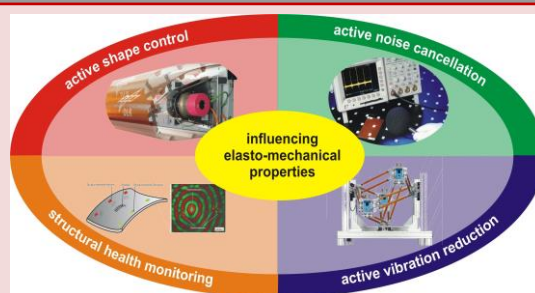
Research Expertise @ SE

Design: Computer aided design, Biomechanics, Smart structures, Acoustics & Vibration, Energy harvesting, Nano- Manufacturing, Concrete, Finite element method

Thermo-fluids: Renewable energy, IC engine, Computational fluid dynamics, Multiphase and Complex fluids, Thermodynamics, Solid state refrigeration, Solar & Thermal radiation, Nano-fluidics, Ground water flow

Geotechnical: Earthquakes, Bio-Engineering, Ground improvement, Landslides, Mitigation measures

Materials: Smart materials, Nano materials, Functional & Thermoelectric materials, Energy storage materials



A short term course and workshop on ADAPTRONICS from 20-23 Sept. 2017

A short term course and workshop on Adaptronics (Active shape control, active vibration control, active noise reduction and structural health monitoring) was inaugurated at IIT Mandi on 20 Sept. 2017. It was a 4 day event in which the participants were Assistant Professors, Ph.D., M.Tech. and B.Tech. students from all over India. Prof. Michael Sinapius, a member of the Directorate of German Aerospace Centre at Braunschweig Germany was among of the speakers of the course.

Workshops organized since Oct'17

A national workshop on Composite Material in Engineering Applications: Design and Manufacturing Perspective (15-19 Jan. 2018)

IIT Mandi Members: Dr. Sunny Zafar, Dr. Himanshu Pathak

External Experts: Dr. Apurbba Kumar Sharma and Dr. Inderdeep Singh from IIT Roorkee, and Dr. Akhilendra Singh from IIT Patna

A one day workshop on Rainfall Induced Landslide: Mapping, Mitigation and Monitoring (11 Oct. 2017)

IIT Mandi Members: Dr. K.V. Uday, Dr. Mousumi Mukherjee, Dr. Varun Dutt

External Experts: Prof. Vikas Thakur from NTNU Norway

Recent patent

Dutt V., Chaturvedi P., Agrawal K., Agrawal S., Mali N. and Kala V. U., (2017). Low Cost sensor Based System for Landslide Monitoring and Alert, Patent Application 201711045337, New Delhi Patent Office Dwarka, New Delhi (18 Dec. 2017)

Distinguished visitors

Prof. Ajit Annachhatre (AIT Bangkok) delivered a talk on Environmental Sustainability-Myth or Reality.

Prof. Ing. Michael Sinapius (IAF Braunschweig, Germany) delivered an institute colloquium on 'Smart structures for aeronautical applications' on 19 Sept. 2017.

Prof. S.P. Mahulikar (IIT Bombay) visited IIT Mandi to teach one credit course on Stealth Technology and to discuss it with Ph.D students.

Prof. Balthasar Novak (University of Stuttgart, Germany) visited IIT Mandi to discuss various research activities with the faculties of School of Engineering.

Prof. Meher Parsad (IIT Madras) visited IIT Mandi for research collaboration.

Dr. S. Mukherjee (IIT Delhi) delivered a lecture on technology in 5 Week Induction Program 2017.

Dr. Kaushal Kishore Sharma (NTPC) visited IIT Mandi to discuss challenges in energy sector.

Dr. G. Raghav (CSIR Chennai) visited IIT Mandi to discuss on Cold Region Engineering Centre.

Publications (as per Scopus)

Till date: 613

During 2018: 28

Most cited paper (as per Elsevier)

Gupta A. and Talha M. (2015). Recent development in modelling and analysis of functionally graded materials and structures, Journal of Progress in Aerospace Sciences, Vol. 79, pp. 1-14.

A Glimpse of Nanoscale Materials and Device Lab

RF-DC Sputtering System



Nano Indentation System



Gas Sensor Measurement System



Probe Station with Photo-Current Measurement



Polarized Optical Microscope



Recently commenced projects

- A FIST proposal on Design, manufacture and testing of energy system was approved to augment the post-graduate teaching and research facilities. This project involves plasma sintering set-up, cold welding facility, dynamic mechanical analyzer, low capacity UTM and laser machining facility.
PI: Dr. Rajeev Kumar, Budget: INR 242.00 Lakhs
- Non-linear active shape and vibration control of functionally graded structure using functionally graded piezoelectric material
PI: Dr. Rajeev Kumar, Budget: INR 18.03 Lakhs
- Heavy metal pick-up from water using Nano fiber
PI: Dr. Sumit Sinha Ray, Budget: INR 10.00 Lakhs
- Determination of fracture properties of bone for diabetic and non-diabetic patients: experimental and numerical investigation
PI: Dr. Rajesh Ghosh, Budget: INR 12.00 Lakhs

Achievements made by students (M.S. & Ph.D.)

Mr. Abhishek Bangunde has been selected as a Graduate Engineer in Ashok Leyland Pvt. Ltd. He is working under the supervision of Dr. Rajeev Kumar.

Mr. K.S. Srikanth co-authored a research paper titled, "Pyroelectric signals in (Ba,Ca) TiO₃-xBa(Sn,Ti)O₃ ceramics: A viable alternative for lead based ceramics", in Scripta Materialia, Vol. 146 (2017). He worked under the supervision of Dr. Rahul Vaish.

Mr. Ankit Gupta co-authored a book chapter titled, "Advances in the fabrication of functionally graded material: modeling and analysis", in Manufacturing Techniques for Materials: Engineering and Engineered, CRC Press. He is working under the supervision of Dr. Mohammad Talha.

Mr. Sarthak Nag co-authored a book chapter titled, "Exhaust heat recovery using thermoelectric generators: A review", in Advances in Internal Combustion Engine Research, Springer, pp. 193-206 (2018). He is working under the supervision of Dr. Atul Dhar and Dr. Arpan Gupta.

Mr. Saurabh Yadav, Mr. Gaurav Sharma and Mr. Sarthak Nag performed acoustic study of A9 lecture hall under the guidance of Dr. Arpan Gupta. The work was published in Journal of Noise and Vibration Worldwide, titled as "Reverberation time improvement of lecture auditorium: A case study", Vol. 49, Issue 1, pp. 14-19 (2018).

Achievements & Outreach made by faculty

Dr. K. Sarkar was conferred with the Distinguished New Faculty Award (2017) for sustained performance of excellence in teaching, research and institute service at IIT Mandi.

Dr. K. Sarkar co-authored a research paper titled, "Residential masonry constructions and their earthquake safety in rural area of Mandi district", in Indian Concrete Journal (ACC, India), Vol. 91, Issue 2, pp. 9-18 (2018). A photograph from this paper featured as the cover of the journal *ICJ* Vol. 91.

Dr. K.V. Uday has been selected to represent the Indian Geotechnical Society as a corresponding member of the International Technical Committee IC-208 on slope stability in engineering practice.

Dr. V. Balakrishnan received the Distinguished Teacher Award for sustained performance of excellence in teaching on the event of Teacher's day 2017.

Dr. G. Bhutani was honoured with the Distinguished New Faculty Award on the event of Teacher's day 2017.

Dr. R. Sharma started a very innovative Ropeway project to replace the traditional jhullas over rivers in Himachal in collaboration with a DST sponsored Society for Technology and Development.

Dr. A. Gupta and Dr. A. Chakraborty visited Indian Institute of Technology Jammu for Curriculum Development workshop for IIT Jammu on 9th Dec 2017.

