

Short Term Course on Elements of Smart Structures

December 15-20, 2025

(Energy Harvesting, Structural Health Monitoring, Shape Modification, and Energy Storage)



Prof. Dr. Ing. Oliver Völkerink
Function Integration in Production Engineering
Technical University of Braunschweig, Germany



Prof. Vishal S. Chauhan
School of Mechanical and Materials Engineering
Indian Institute of Technology Mandi

About the Speaker of the short-term course

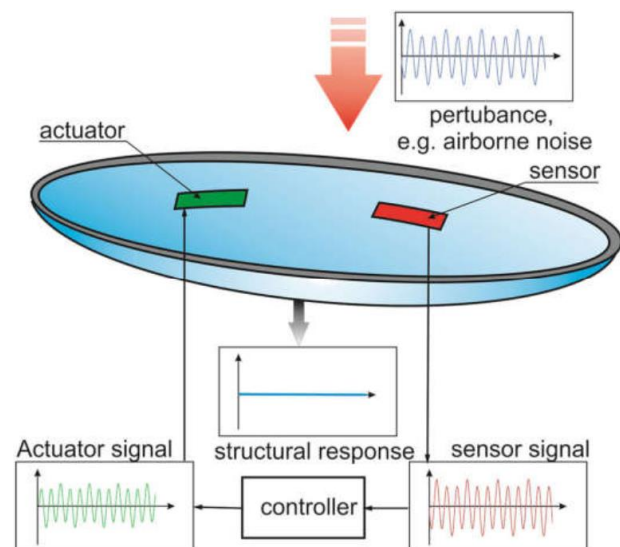
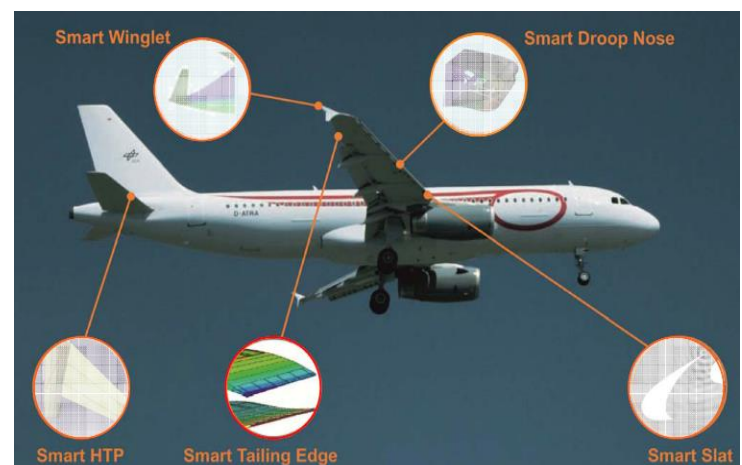
Prof. Dr.-Ing. Oliver Völkerink is the Assistant Professor for Function Integration in Production Engineering at the Technical University of Braunschweig, Germany. He is also a Scientist at the German Aerospace Centre (DLR) in Braunschweig. His current research activities focus on Energy Harvesting, Structural Health Monitoring, Shape Modification, Energy Storage Composites Bonded Joints, Material Modelling, Function Integration, and Circular Economy. Prof. Völkerink has published several research articles in international journals of repute.

Objectives

- Getting to know smart materials for smart structures.
- Understanding technologies for incorporating multifunctionality into structures.

Eligibility

The course and workshop are open to Faculty Members, Students from Engineering Colleges / Polytechnics and Practicing Engineers from Industries and R&D Institutions. Seats are limited.



Short Term Course Contents (15-20 December 2025)

Lectures

- Introduction of functional materials.
- Smart materials, piezo materials
- Structural integration of smart materials.
- Structure-borne sound and interference.
- Vibration control.
- Integrated sensors and control of sound.
- Active Noise Control

Lab Sessions

- Characterization of piezoelectric materials
- Shape morphing experiment
- Control of acoustic noise/vibration control experiment

General Information about IIT Mandi

Nestled in the Shivalik Range of the Himalayas, away from the bustle of the metropolis, a new abode of learning, IIT Mandi, lies in valley of villages Kamand and Salgi. The focus of IIT Mandi is to spearhead cutting edge research and development of technologies needed by the world in the years to come. Research groups try to work together in creating and harnessing the newest technologies needed to serve the people of the region and the country, and to tackle problems of global importance. In order to achieve excellence and high impact locally and globally, IIT Mandi is focusing to strongly foster inter-disciplinary R&D.

Registration Fee

Registration fee includes course material, a registration kit, accommodation, and food (breakfast, lunch, snacks, tea refreshment, dinner, one special dinner) during workshop days. Accommodation is on sharing basis at hostel for students and at Guest House for Faculty Members and Practicing Engineers.

Practicing Engineers: ₹ 17,000/- Faculty Members: ₹ 17,000/-

Students: ₹ 5,000/-

Students: ₹1000/- (Excluding stay and food)

Account Details for payment of fee

Account Name: CCE, IIT Mandi; Account No.: 7315000100034369, Bank: Punjab National Bank, Branch IIT Kamand, IFSC Code: PUNB0731500

How to Apply

The Google form given on the link below should be filled after paying the relevant fee. Along with the proof of fee payment, the form should be filled.

For details, please check “<https://research.iitmandi.ac.in/eoss2025>”

Email Address for correspondence:

For any queries, email may be sent to: eoss@iitmandi.ac.in