Faculty Development Program

Title : Wind Induced Vibration Energy Harvesting

Date : 2025-09-02 - 2025-09-02
Time : 11:45 - 13:15
Venue : TT 707

Event Outcome

- Sustainable Power Supply
Self-Powered Smart Infrastructure
Support for IoT Devices
Cost Reduction
Utilization of Waste Energy
To enrich the knowledge in energy harvesting for the participants

Resource Person 1 - Details
Name : Grzegorz Litak
Designation : Professor , Mechanical
University/ Company : Lublin University of Technology , Lublin
Address : Poland, 632014.

Resource Person's Profile :

1. Profile of Grzegorz Litak

Prof. Grzegorz Litak is a distinguished scholar in the field of mechanical engineering and nonlinear dynamics, currently serving as a Full Professor and Head of the Department of Automation at the Faculty of Mechanical Engineering, Lublin University of Technology, Poland. He has made significant contributions to the study of nonlinear systems, bifurcation theory, chaotic dynamics, and nonlinear time series analysis, with his research also spanning areas of mechanical and production engineering.

Wind-induced vibration energy harvesting is an emerging technique that utilizes the natural oscillations caused by wind flow around structures to generate electrical power. When wind interacts with objects such as buildings, bridges, or specially designed devices, it induces vibrations through phenomena like vortex shedding, galloping, or flutter. These vibrations, instead of being wasted or posing structural risks, can be converted into useful energy using transducers such as piezoelectric materials, electromagnetic systems, or triboelectric generators. This form of energy harvesting is particularly attractive because it offers a sustainable and low-cost way to power small electronic devices, wireless sensors, and monitoring systems in remote or urban environments, without relying on traditional batteries or large wind turbines. It also contributes to advancing self-powered smart infrastructures and the Internet of Things (IoT).

NA

Coordinator: **Teaching Learning Centre of Excellence, VIT, Vellore**