



## About Us

The Centre for Functional Materials (CFM) at VIT Vellore is a leading research hub dedicated to the design, synthesis, and application of advanced materials. We bridge the gap between fundamental science and industrial innovation, creating tangible solutions for real-world challenges.

## Our Vision

*"To be locally and globally recognized in cutting-edge research, education and innovation related to functional materials, ultimately catering to societal needs."*



## KEY CAPABILITIES OFFERED

- ⌘ **Thin Film Deposition:** State-of-the-art Pulsed Laser Deposition and Magnetron Sputtering with a large-area chamber for uniform coatings.
- ⌘ **Advanced Material Characterization:** Comprehensive suite including a Probe Station (RT to 200°C) with industry standard bench-top Source Measure Units, Z-Scan, and Solar Simulator.
- ⌘ **Laser-Based Surface Modification:** High-energy laser systems for Laser Shock Peening and material damage threshold studies.
- ⌘ **Electrochemical Analysis:** In-depth testing of energy devices and corrosion studies using electrochemical Workstation.



## Collaborate With Us

We are actively seeking industrial partners to translate our research into commercial success. Let's innovate together through flexible engagement models tailored to your needs.



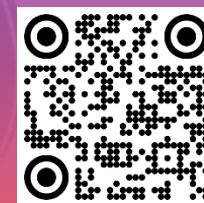
## PRODUCT HIGHLIGHTS

- ⌘ **Flexible EMI Shield**  
Flexible Electronics: We have developed lightweight, flexible EMI shields and screen-printed conductive inks on eco-friendly substrates, offering novel solutions for wearable technology, IoT, and smart packaging.
- ⌘ **Piezoelectric Generator**  
Energy Harvesting: Our lab fabricates Piezoelectric Nanogenerators (PENGs) that efficiently convert ambient mechanical motion and vibrations into electrical power for remote sensors and low-power electronics.

## Contact Us

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For more details scan



## MODELS OF ENGAGEMENT

- ⌘ **Sponsored R&D Projects:** Engage our experts to solve your specific material science challenges with defined goals and deliverables.
- ⌘ **Consultancy & Technical Services:** Leverage our faculty's expertise and access our advanced characterization facilities on a fee-for-service basis.
- ⌘ **Technology Licensing:** Partner with us to commercialize our patented innovations and intellectual property.
- ⌘ **Workforce Development:** Collaborate on creating an industry-ready curriculum and specialized training modules for your employees.



## Core Strengths & Industry Applications

Innovating Materials for Tomorrow's Industries



### ENERGY SOLUTIONS

- ⌘ High-performance battery and supercapacitor development
- ⌘ Materials for next-generation solar cells
- ⌘ Self-powering sensors via piezoelectric nanogenerators (PENGs)
- ⌘ Novel materials for green hydrogen production (HER/OER)

### FUNDING AGENCIES



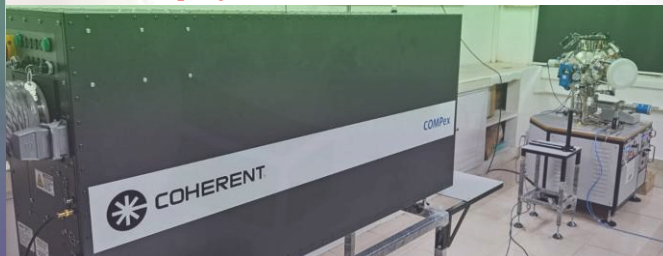
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### ADVANCED ELECTRONICS, SPINTRONICS, AND OPTOELECTRONICS

- ⌘ Materials for low-power, high-speed memory & logic devices
- ⌘ Development of quantum materials for future computing
- ⌘ Neuromorphic devices for AI and machine learning hardware
- ⌘ Transparent conducting oxides for displays and smart windows



### SPECIALTY MATERIALS & SURFACE ENGINEERING

- ⌘ Flexible EMI shields for wearables and aerospace
- ⌘ Conductive inks for printed and flexible electronics
- ⌘ Enhancing material fatigue strength and wear resistance
- ⌘ Materials with advanced nonlinear optical properties

