



# PSG INSTITUTE OF TECHNOLOGY AND APPLIED RESEARCH

Neelambur, Coimbatore

Dr D Sathia Narayanan (Scientist F, Deep Sea Technologies, NIOT Chennai) addressed the faculty and research scholars of PSGiTech on 17<sup>th</sup> March 2025 as a part of Lets Talk Research lecture series. The speaker discussed about **manned submersibles**, emphasizing their role in deep-sea exploration and scientific research. **Ocean observation systems** were examined for their ability to monitor marine ecosystems, track climate change effects, and enhance disaster prediction. The talk also covered **Ocean Electronics**, focusing on sensors, data acquisition systems, and their integration into autonomous platforms. It then delved into the **fundamental principles of hydrostatics and hydrodynamics**, explaining their impact on vehicle stability, buoyancy, and propulsion efficiency. Building on this, the speaker elaborated on **underwater communication and navigation**, addressing the challenges of transmitting signals through water using acoustic modems, sonar systems, and GPS alternatives for precise positioning. He also discussed **key issues in subsea robotics**, including hydrodynamics, propulsion, power, control, transmission, launching, recovery, and navigation. To provide deeper insight, he shared his personal underwater experiences through video footage captured during research. The session concluded with a discussion on the **future of subsea robotics**, emphasizing the need for **interdisciplinary research and technological innovation** to enhance deep-sea exploration capabilities.

