



2025 IEEE 4th International Conference

on

Smart Technologies for Power, Energy and Control (STPEC 2025)

December 10-13, 2025

Department of Electrical and Electronics Engineering,
National Institute of Technology Goa, Goa, India



Special Session 02 (SS02)

Guidance, Navigation and Control of Robotic Systems

Organized and co-chaired by:

- Dr. Kaushal Kishore, CSIR-CEERI, Pilani, India
- Mr. Ashutosh Dutt Sharma, IHFC, New Delhi, India
- Dr. Soumen Sen, CSIR-CMERI, Durgapur, India

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Call for Papers

• Technical Outline of the Session:

This special session focuses on the latest advancements in the control, guidance, and navigation of robotic systems, including aerial, ground, and underwater platforms. The session will highlight both theoretical approaches and practical solutions in areas such as nonlinear and adaptive control, sensor fusion, localization, path planning, and real-time navigation. Special attention will be given to emerging techniques involving AI and machine learning, swarm coordination, and robust operation in complex and uncertain environments.

We aim to bring together experts from academia, research institutions, and industry to share innovations, field-tested applications, and new challenges in robotic autonomy. Topics may include GPS-denied navigation, control system integration, trajectory optimisation, and autonomous mission planning.

• Topic of the Session includes, but are not limited to:

- Nonlinear and adaptive control
- Sensor fusion, localisation, path planning, and real-time navigation
- GPS-denied navigation, control system integration
- Trajectory optimisation and autonomous mission planning
- Vision and camera-based navigation control
- AI systems in control and navigation
- Path planning with AI agents
- Centralised and decentralised control strategies in robotics
- Simulation and virtual environment for control testing in robotics
- Robotics mobility control and soft robotics control systems

• Important Dates:

- Special Session Paper Submission Due : June 15, 2025
- Notification of Paper Acceptance : July 31, 2025
- Camera Ready Paper Submission Due : August 31, 2025
- Regular Registration Due : October 30, 2025

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