**PHMAP23 Organised session Proposal form**

Session organiser: **Dr. Madhav Mishra**, Senior Scientist at RISE Research Institutes of Sweden

Session title: AI based PHM for Power Electronics components and systems

Field: Power Electronics

Full description:

Power electronics systems are crucial for achieving efficient energy conversion and promoting sustainability in modern societies. To make the most of energy resources smart, smart electronic devices are necessary in increasingly connected and digitalized societies. AI based PHM for Power Electronics components and systems session aims to bring together experts and practitioners in the field of artificial intelligence, PHM and power electronics to discuss the latest developments and advancements in the use of AI for condition-based monitoring and prognostics of power electronics systems.

The session will cover key topics such as the fundamentals of AI-based PHM, Reliability, machine learning, Federated Learning, Deep learning techniques for power electronics systems, data-driven prognostics and decision-making, and the challenges and limitations of implementing AI & PHM in power electronics applications. The goal is to use AI based PHM to improve the reliability and longevity of power electronics components and systems, enabling proactive maintenance and reducing downtime

The intended outcomes for attendees include gaining a deeper understanding of AI-based PHM, learning about the latest developments in the field, and establishing connections and collaborations with other experts and practitioners. The session will provide an opportunity for attendees to exchange ideas and best practices, and to discuss the future directions of AI in power electronics systems.

Tentative list of presenters (4 presenters per block):

- RISE Research Insitiues of Sweden
- TU Delft
- Volvo Group
- ALSTOM
- VTT
- Volvo
- BTH