International Conference on Data-Processing and Networking (ICDPN-2025)

Date: 7th – 8th November, 2025

ORGANISED BY : Institute of Technology and Business in České Budějovice, Near Prague, Czech Republic, Europe (Venue).

************** CALL FOR PAPERS **************

SPECIAL SESSION ON
"Intelligent Wireless Systems: Integrating Sensor Networks, Cognitive Communication, and Neuro-Adaptive Power Transfer"

SESSION ORGANIZERS:
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EDITORIAL BOARD: (Optional)
[Name, University or Organization, Country, e-mail]

SESSION DESCRIPTION:
This special session aims to explore the next frontier in intelligent wireless systems by integrating advancements in wireless sensor networks (WSNs), cognitive communication technologies, and neuro-adaptive wireless power transfer (WPT). The convergence of these domains marks a paradigm shift toward responsive, brain-aware, and energy-efficient wireless ecosystems. These intelligent systems form the core infrastructure of future smart environments—spanning Industry 4.0, brain-computer interfaces (BCIs), the Internet of Things (IoT), neuroprosthetics, and autonomous biomedical implants. Emphasis will be placed on how cognitive and physiological signals can dynamically influence wireless communication protocols and power delivery, enabling real-time adaptation, minimal latency, and extended device longevity. The session invites interdisciplinary contributions at the intersection of wireless engineering, computational neuroscience, and embedded systems.
We invite original and high-quality research contributions for a special session that explores cutting-edge developments at the intersection of wireless technologies and cognitive systems. This session focuses on the integration of wireless sensor networks (WSNs), intelligent communication protocols, and neuro-adaptive wireless power transfer (WPT) mechanisms to support emerging applications in smart environments, brain-computer interfaces, biomedical implants, and cognitive monitoring.

Papers may address theoretical models, system architectures, hardware implementations, AI-enhanced signal processing, and real-world deployments. Interdisciplinary submissions combining wireless engineering, computational neuroscience, and embedded AI are especially welcome.

This session is an ideal platform for researchers, academicians, and industry practitioners to share cutting-edge developments and foster collaborative research in wireless innovations, cognitive communication technologies, and neuro-adaptive wireless power transfer (WPT).

RECOMMENDED TOPICS:

Topics to be discussed in this special session include (but are not limited to) the following:

- Energy-Efficient Wireless Sensor Networks (WSNs)
- Machine Learning for WSN Optimization
- AI-based Optimization in Wireless Power Systems
- Security, Privacy and Low-Power in Wireless Sensor Systems and Medical Devices
- AI-Enabled Routing and Energy Harvesting
- Electromagnetic Interference and Mitigation in WPT
- Swarm Intelligence in WSNs Inspired by Neural Computation
- Cognitive Wireless Networks: Networks That Learn User Mental States
- Cognitive State Detection in Smart Environments Using WSNs
- Brain-to-Cloud Interfaces: Wireless Communication for Decentralized Neural Computation
- Real-Time Cognitive Load Monitoring Using Wireless Sensor Networks
- Edge AI for Wireless EEG-Based Brain-State Classification

SUBMISSION PROCEDURE:

Researchers and practitioners are invited to submit papers for this special theme session on **"Intelligent Wireless Systems: Integrating Sensor Networks, Cognitive Communication, and Neuro-Adaptive Power Transfer".**

All submissions must be **original** and may not be under review by another publication. **INTERESTED AUTHORS SHOULD CONSULT THE CONFERENCE'S GUIDELINES FOR MANUSCRIPT SUBMISSIONS**

at:https://www.icdpn-conf.com/Downloads.

All submitted papers will undergo a **double-blind peer review** process.

NOTE: While submitting the paper in this special session, please specify **[Intelligent Wireless Systems: Integrating Sensor Networks, Cognitive Communication, and Neuro-Adaptive Power Transfer]** at the top (above the paper title) of the first page of your paper.

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