IEEE ICAIGE 2024
The SECOND IEEE International Conference
on Artificial Intelligence & Green Energy
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Special Session Proposal

Title

Innovations in Sensing and Sustainable Energy using AI and Optimization Strategies

Session organizers

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Laboratory of Electronics and Microelectronics, Faculty of Science of Monastir, Tunisia.
Fraj Echouchene earned both his Master's and Ph.D. degrees in Physics from the University of Monastir, Tunisia, in 2006 and 2012, respectively. In 2021, he achieved an Academic Habilitation degree in Physics from Monastir University. Currently, he serves as an Associate Professor with the Electronics Department of ISSAT, University of Sousse. Additionally, he is a researcher at the Laboratory of Electronics and Microelectronics, Faculty of Science of Monastir, Tunisia. His ongoing research interests lie in the optimization of microfluidic biosensors and the simulation of self-heating in nanoscale transistors.

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NANOmatériaux et MIcrosystèmes pour la Santé, l'ENvironnement et l'Energie, Technopole de Sousse, Tunisia.
Sameh Kaziz received her PhD in physics from the University of Tunis, Tunisia, in 2009. Presently, she holds the position of is an assistant professor in physics at the Microelectronics and Nanotechnology Research Center, Sousse Technopole, Tunisia. In 2023, She achieved Academic Habilitation (HDR) in Physics from the University of Tunis and concurrently works as a researcher at the NANOMISENE Laboratory, CRMN Technopole of Sousse, Tunisia. Her primary research focuses on the simulation and optimization of microfluidic biosensors.

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Houcine BARHOUMI received his PhD in Physical Chemistry in 2006 and his habilitation degree in 2015. Presently, he is a researcher and a Professor in the Department of Chemistry, University of Monastir-Tunisia. His research involve the surface and interface electrochemical optimization for electrochemical sensors development for ions and bioanalyte quantification, as well as the fabrication of multi-sensors called electronic tongue for the liquid discrimination.

Brief Description of the session thematic

This special session is dedicated to presenting and exploring recent advances in sensor devices and energy production. Under the theme "Sensor Devices," the session will explore the functionality and potential of biosensors, as well as modeling, simulation, and optimization techniques suitable for current and future

applications. More specifically, it will highlight the integration of artificial intelligence to anticipate sensor responses and improve overall performance.
At the same time, the session addresses the promising area of "hydrogen production" as a sustainable energy solution for the environment. Artificial intelligence and optimization methods play an indispensable role in advancing hydrogen production to improve efficiency and sustainability. In addition, predictive modeling enables real-time operational improvements, making hydrogen production technologies more economically viable, environmentally sound, and scalable for various applications in transportation, industry, and energy storage.

Topics and Keywords

Topics:

- Innovations in detection technology
- Sensors and their applications
- Sustainable energy solutions
- Artificial Intelligence Applications
- Optimization Strategies

Keywords: Artificial Intelligence; Biosensors; Detection Technology; Hydrogen Production; Optimization; Predictive Modeling; Sustainable Energy

Number of pages

4 to 6 pages

Deadlines

Full paper submission: June 15th, 2024.
Authors' notification: August 30th, 2024.
Camera-ready paper submission: September 15th, 2024.

List of potential reviewers

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Submissions Procedure

The instructions for the submission of your manuscript are included in the conference website via the following link: https://icaige.tn/submission/