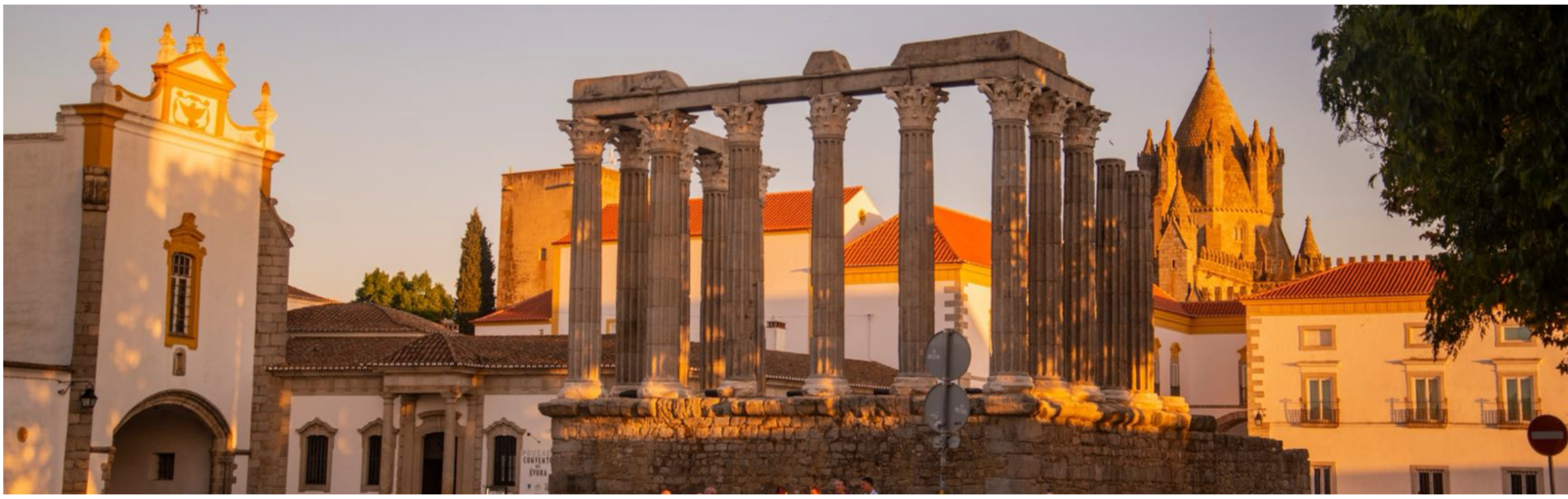


expat'23 Special Session

'Smart Wireless Sensor Networks for Forest Fire Prevention and Early Warning (SenForFire'23)'

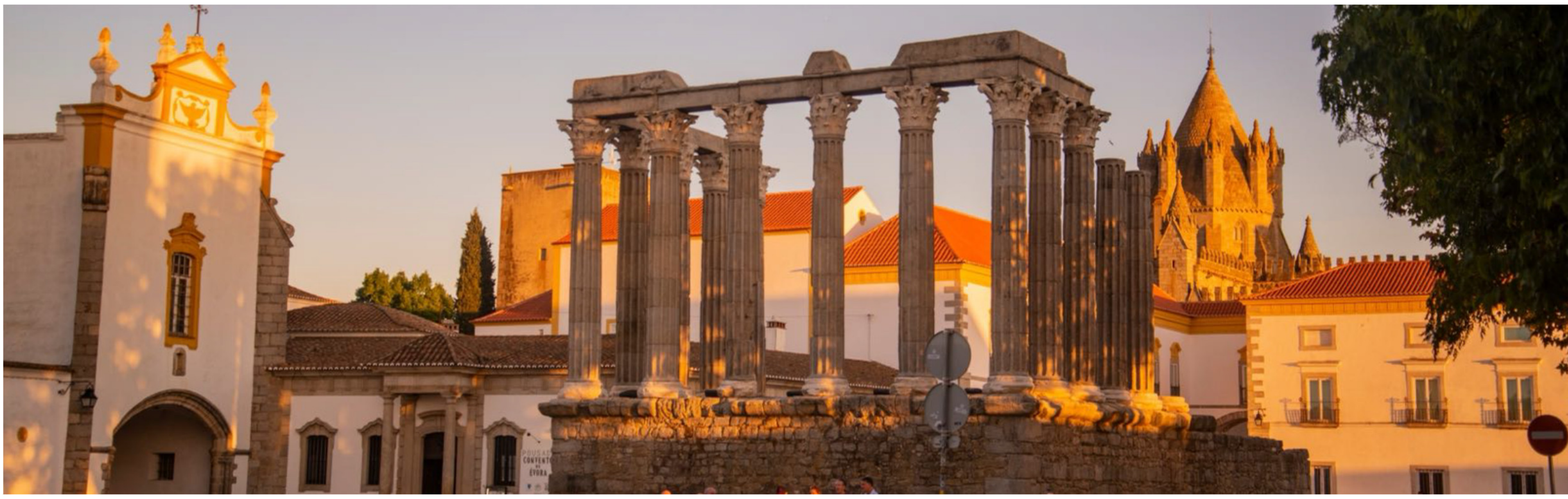
There is an urgent need for cost-effective smart real-time environmental monitoring systems to predict, detect and provide early warning of fire outbreak in wildlands, thus, preventing the development of extreme fires that have devastating consequences for people, ecosystems, economy, and biodiversity. Current remote sensing technologies for observation and imaging of the earth's surface suffer from low spatial and temporal resolution, high sensitivity to weather conditions and land surface topography, and high costs. Wireless sensor networks (WSN) in combination with the internet of things (IoT), low-power long-range wireless communication, cloud computing, big data (BD), and artificial intelligence (AI) offer an emerging promising solution for the prevention and early detection of wildfires. In practice, WSN face various kinds of issues like power constraints, resource constraints, unavailability of hardware, short-range communication, limited data processing and storage capacity, etc. that make the cost, time, and complexity involved in the deployment and implementation of WSN very high. This Special Session brings the latest advances in low-cost low-power small-size environmental sensors, open-source electronic platforms, wireless communication protocols, BD and AI techniques and algorithms to overcome the challenges surrounding WSN to turn it into an affordable, scalable, robust, and reliable technology for its application in the fight against wildfires in increasing areas of the planet.

Topics of Interest:

- Micro/nanosensors for measuring meteorological parameters and forest fuel moisture, and for detecting fire ignition (hotspot, smoke, flame)
- Architecture and subsystems (sensing, processing, communication, power) of sensor nodes in WSN
- Design, dimensioning, architecture and topology of WSN
- Self-organization models for WSN
- Routing protocols for WSN
- Metrics and methods for evaluating the performance of WSN
- Integration, fusion and mining of data and information from multiple sources (including WSN) for wildfire risk assessment and mapping
- Artificial intelligence techniques (machine learning, deep learning) for wildfire risk prediction and detection based on WSN

Chairs of the Program Committee of (SenForFire):

Esther Hontañón, Consejo Superior de Investigaciones Científicas, Madrid, Spain, esther.hontanon@csic.es
Jesús Lozano, Universidad de Extremadura, Spain, jesuslozano@unex.es
Bernardete Ribeiro, Universidade de Coimbra, Portugal, bribeiro@dei.uc.pt
Catarina Silva, Universidade de Coimbra, Portugal, catarina@dei.uc.pt



Program Committee (to be completed)

Jorge Fernández, Universidad de Sevilla, Consejo Superior de Investigaciones Científicas, Spain
Iñigo Cuiñas, Universidade de Vigo, Spain
De-Yi Wang, Instituto IMDEA Materiales, Madrid, Spain
José Sánchez del Río, Universidad Politécnica de Madrid, Spain
Antonio Vázquez, Instituto IMDEA Materiales, Madrid, Spain

Important dates:

Submission Deadline	February 27, 2023
Notification of Acceptance	March 27, 2023
Camera-Ready Due	April 28, 2023
Early Author Registration	April 28, 2023
Conference Dates	June 05-07, 2023
Technical Activities	June 08, 2023

Language, Review Process, and Publications (following the main Conference)

English is the official language of the Conference.

The articles and extended abstracts (demos) will be under a double-blind peer review process.

Submission Articles (full papers with 4-6 pages) and extended abstracts (demos with 2 pages) submitted to expat'23 (according to IEEE Template) will follow the EasyChair platform.

Accepted and presented papers and demos will be published in electronic format and will be submitted for acceptance into the IEEE Xplore® paper database.

The conference will promote the organization of special issues in internationally indexed journals (e.g., Information, https://www.mdpi.com/journal/information) for extended versions of selected papers, with APC discount for publication in Open Access format.