

## Special Issue

# Forest Ecology and Resource Monitoring Based on Sensors, Signal and Image Processing, 2nd Edition

### Message from the Guest Editors

The Special Issue will feature state-of-the-art research on:

- AI-Powered Sensing: Deep learning models for automated tree species classification from UAV imagery or satellite data.
- Multimodal Data Fusion: The integration of LiDAR, radar, and optical imagery to improve forest biomass estimation accuracy.
- Nanoscale and IoT Sensors: Miniaturized sensors for monitoring microclimatic variables (e.g., humidity or CO<sub>2</sub>) or plant physiological signals (e.g., leaf water potential).
- Edge and Cloud Computing: The real-time processing of sensor data in remote forests using edge devices coupled with cloud-based big data analytics for long-term trend analysis.
- Novel Imaging Techniques: Hyperspectral and thermal imaging for detecting early signs of forest stress (e.g., drought or invasive species).

We invite submissions covering, but not limited to, the following areas:

- UAV/RPA-based forest monitoring systems;
- Machine learning for forest image analysis;
- Sensor networks for real-time fire/pest detection;
- Satellite-derived forest carbon stock assessments;
- AI-driven tools for automated forest inventory;
- Challenges in sensor data scalability and interoperability.

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### Guest Editors

Prof. Dr. Yili Zheng

Dr. Paul Sestras

Prof. Dr. Yue Zhao

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### Deadline for manuscript submissions

31 March 2026



## Forests

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## About the Journal

### Message from the Editor-in-Chief

*Forests* (ISSN 1999-4907) is an international and cross-disciplinary, scholarly forestry journal. The distinguished editorial board and refereeing process ensures the highest degree of scientific rigor and review of all published articles. Original research articles and timely reviews are released online, with unlimited free access. Our goal is to have *Forests* be recognized as one of the foremost publication outlets for high quality, leading edge research in this broad and diverse field. We therefore invite you to be one of our authors, and in doing so share your important research findings with the global forestry community.

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### Editor-in-Chief

Prof. Dr. Giacomo Alessandro Gerosa

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