Special Issue

Optical Metrology for Environmental Monitoring

Message from the Guest Editors

Optical metrology has emerged as a powerful tool for addressing critical challenges in environmental monitoring. As global concerns over climate change, pollution, and food security intensify, the need for accurate, real-time, and scalable monitoring techniques is becoming paramount. This Special Issue focuses on cutting-edge optical techniques applied to environmental monitoring tasks.

We invite contributions exploring the application and advancement of optical methods including speckle metrology, digital holography, interferometry, polarimetry, and hybrid optical systems.

Potential topics include, but are not limited to, the following:

- Optical temperature and flow diagnostics in natural ecosystems;
- Microplastic detection and characterization;
- Non-destructive optical techniques for crop and soil monitoring;
- Advances in speckle-based and interferometric techniques;
- Holographic and 3D imaging for environmental assessment;
- Portable and real-time optical sensing systems.
- Advanced polarimetric techniques for non-invasive assessment;
- Novel computational algorithms; deep learning methods for image reconstruction and optimization.

Guest Editors

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Message from the Editor-in-Chief

As the world of science becomes ever more specialized, researchers may lose themselves in the deep forest of the ever increasing number of subfields being created. This open access journal Applied Sciences has been started to link these subfields, so researchers can cut through the forest and see the surrounding, or quite distant fields and subfields to help develop his/her own research even further with the aid of this multi-dimensional network.

Editor-in-Chief

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