Special Issue

Advances in Dual-Comb Spectroscopy

Message from the Guest Editors

Dual-comb spectroscopy (DCS) is a revolutionary technique that combines the precision and breadth of traditional broadband spectroscopy with the high-resolution capabilities of continuous-wave laser spectroscopy. The exceptional frequency resolution, bandwidth, and brightness of optical frequency combs empower dual-comb spectroscopy to detect and analyze multiple gas species with sub-wavenumber spectral resolution. This Special Issue highlights cutting-edge developments in source technology, techniques, and groundbreaking applications in precision laboratory spectroscopy and environmental sensing. All theoretical, numerical, and experimental papers are accepted. Topics include, but are not limited to, the following:

- Novel sources, including those extending dual-comb spectroscopy into less developed spectral regions such as VUV, DUV, and MIR;
- Time-resolved dual-comb spectroscopy;
- Electro-optical combs;
- Kerr combs;
- Techniques to improve spectral resolution, sensitivity, etc.;
- Precision laboratory spectroscopy;
- Open-path spectroscopy for environmental sensing;
- Hyperspectral imaging and multi-dimensional spectroscopy.

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Message from the Editor-in-Chief

You are invited to contribute a research article or a comprehensive review for consideration and publication in *Photonics* (ISSN 2304-6732). *Photonics* is an online open access journal covering both the fundamental and applications of optics and photonics. *Photonics* strives to provide an avenue to allow authors to disseminate their scientific findings—both theoretical/ simulations and experimental works—in highly accessible peer-reviewed journal publications. The manuscript in *Photonics* will be handled with quick turnaround production processing time. We welcome authors to submit their manuscripts for publications in *Photonics*. Our goal in *Photonics* is to enable fast dissemination of high impact works to the scientific community.

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