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Laser Frequency Combs for Absolute Distance Measurements

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Message from the Guest Editor

Dear Colleagues:

In the last decade, remarkable progress has been made in laser frequency comb technology by making use of crystals or fiber type mode-locking oscillators, electro-optic modulators, and micro-cavities. These laser frequency combs are being employed for diverse investigations to advance frequency metrology and spectroscopy. In this Special Issue, focus is given to absolute distance measurements, for which laser frequency combs are offering new possibilities beyond the capabilities of traditional light sources. In this respect, quite a few advanced techniques have been demonstrated with the common aim to achieve sub-wavelength precision in long-distance ranging by taking the advantage of unique time and/or frequency domain characteristics of laser frequency combs. Examples include radio-frequency synthetic wavelength interferometry, pulse-to-pulse cross-correlation interferometry, dispersive spectral comb interferometry, dual-comb multi-heterodyne interferometry, multi-wavelength interferometry and time-of-flight measurement using nonlinear optical cross-correlation.

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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.

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