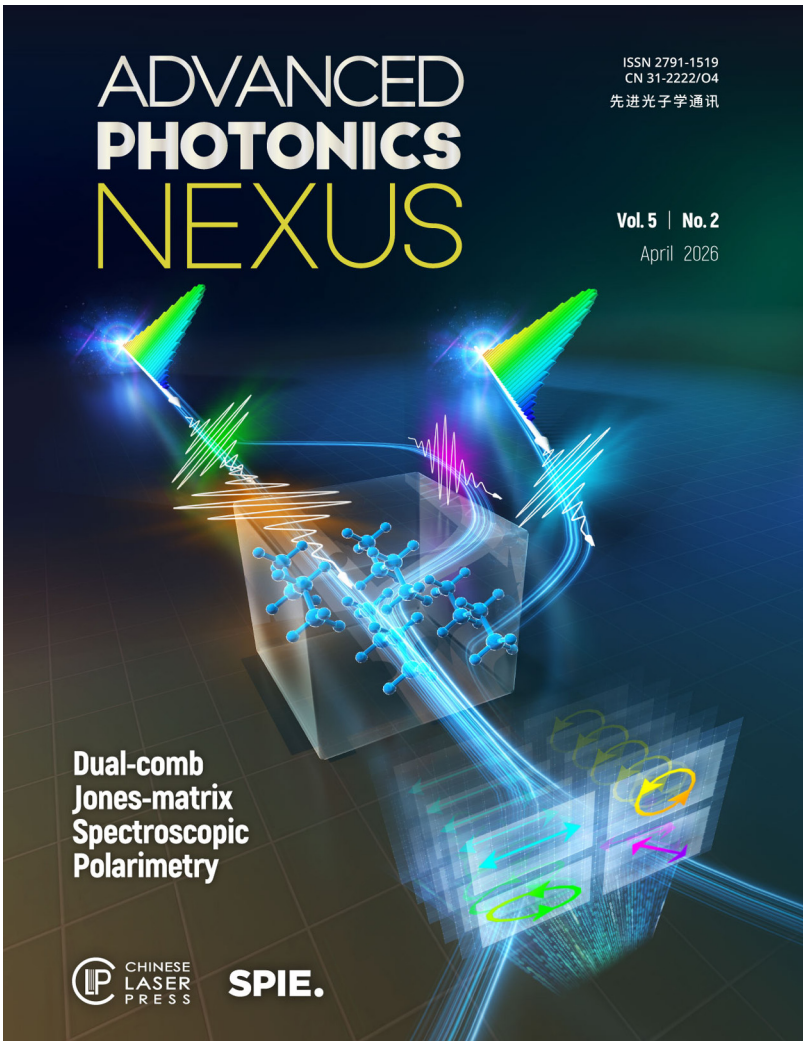

About the Cover: *Advanced Photonics Nexus* Volume 5 Issue 2

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Comprehensive characterization of polarization-dependent optical properties across a broad spectral range is essential for understanding complex light–matter interactions in photonic materials, optical devices, and biological systems. Spectroscopic polarimetry provides this capability by measuring how the polarization state of light changes as a function of wavelength. However, conventional spectroscopic polarimetry typically relies on mechanical polarization modulation and spectrometers, which limit measurement speed, stability, and spectral resolution.

To address these limitations, researchers recently developed dual-comb Jones-matrix spectroscopic polarimetry, which integrates dual-comb spectroscopy with polarization-controlled pulse sequences. Optical frequency combs generate broadband light with precisely defined frequencies, while polarization-controlled pulse sequences encode multiple polarization states into temporally separated ultrashort pulses. Using dual-comb interferometry, the system simultaneously measures the spectral amplitude and phase responses of orthogonal polarization components, enabling reconstruction of the Jones matrix as a function of wavelength without mechanical polarization modulation or conventional spectrometers.

The image on the cover for *Advanced Photonics Nexus* Volume 5 Issue 2 illustrates this measurement principle. Broadband optical frequency combs interact with a material sample, and the resulting polarization responses are analyzed to reconstruct wavelength-resolved Jones matrices. The stacked matrices represent these wavelength-resolved Jones matrices, highlighting how this proposed spectroscopic polarimetry approach enables rapid and comprehensive characterization of polarization-dependent optical properties. The image is based on original research presented in the Gold Open Access article "Dual-comb spectroscopic polarimetry for full Jones matrix retrieval enabled by polarization-controlled pulse sequences" (doi 10.1117/1.APN.5.2.026002) by Hidenori Koresawa, Hiroki Kitahama, Shogo Tanimura, Eiji Hase, Yu Tokizane, Akifumi Asahara, Takeo Minamikawa, Kaoru Minoshima, and Takeshi Yasui.