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Modern information networks are built on hybrid systems working at disparate optical wavelengths. Coherent conversion of photons between different wavelengths is highly desired. Researchers from The Chinese University of Hong Kong and University of Science and Technology of China proposed a new scheme of coherent wavelength conversion with simple experimental requirements and an enhanced operating bandwidth. In their work, “Highly tunable broadband coherent wavelength conversion with a fiber-based optomechanical system,” authors Xiang Xi, Chang-Ling Zou, Chun-Hua Dong, and Xiankai Sun report experimental realization of coherent information transfer

between two orthogonally propagating light beams of disparate wavelengths in a fiber-based optomechanical system by demonstrating broadband optomechanically induced transparency and absorption with high tunability.

In the system, a high-quality mechanical mode serves as a coherent link between the pump and probe photons at different wavelengths. The information carried by the pump light traveling in the fiber core is coherently transferred to the probe light of a cavity mode traveling orthogonally in the fiber cladding. The image on the cover for [Advanced Photonics Volume 4 Issue 5](#) provides a visual rendering of this process.