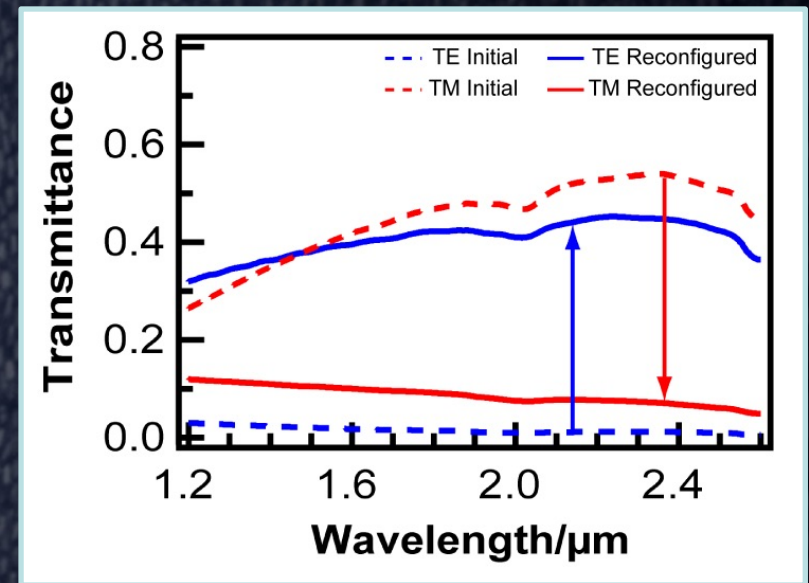
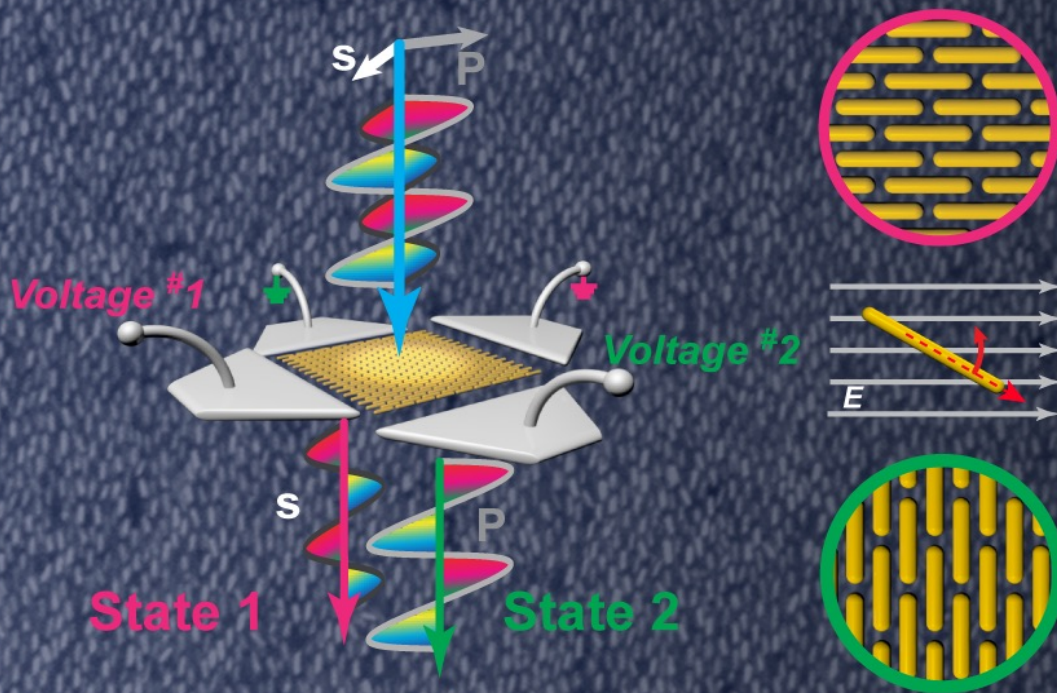


Nanowire Assembly Enables Switchable Broadband Polarizers

Penn State MRSEC DMR-1420620: S. J. Boehm, L. Kang, D. H. Werner and C. D. Keating, Field-Switchable Broadband Polarizer Based on Reconfigurable Nanowire Assemblies, *Advanced Functional Materials*, **27**, 1604703 (2017).



Gold nanowire lattices were formed by electric field directed assembly and reconfigured on-demand between two different functional states, in the form of broadband polarizers. By selectively switching the electric field between two orthogonal electrode pairs, a maximum transmission contrast of *ca.* 50% is observed in the near-infrared regime. Moreover, the reconfigurable transmission spectra, which are highly dependent on the nanowire size and electric field conditions, are reversible. The demonstrated proof-of-concept nanowire lattice polarizer provides potential for electrically reconfigurable photonic devices such as ultra-compact polarization components, electro-optic switches, and on-chip modulators.