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.