



Figure. Main results of our presentation. We performed both **(a)** experimental ellipsometry analysis and **(b)** theoretical effective-medium modeling on thin-film VO₂. The characterized temperature-dependent refractive index shown in **(c)** enabled us to design and realize tunable photonic devices in two popular nanophotonic geometries: **(d)** reflective optical limiters based on metasurface structures and **(e)** switchable broad-to-narrow bandpass filters based on thin-film assemblies.