

Supporting Information
for
Optically tunable Mie-resonance VO₂ nanoantennas for
metasurfaces in the visible

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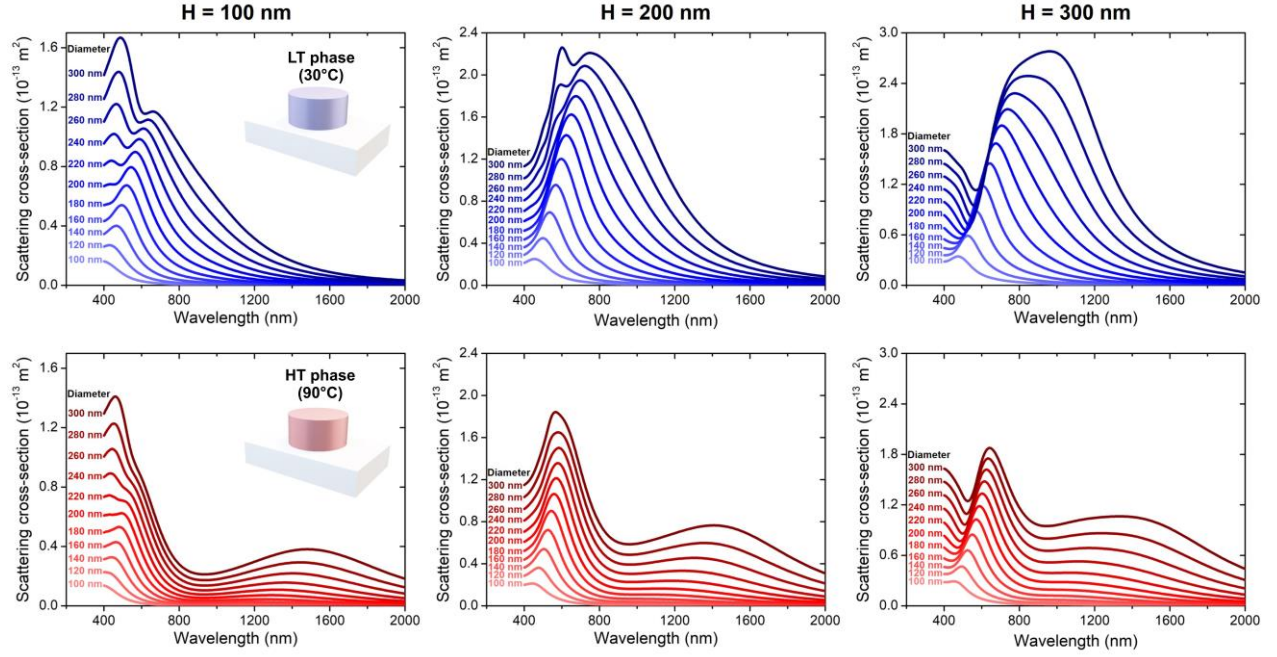


Figure S1. Simulated scattering cross-section spectra of single VO₂ nanodiscs with varying height (100 nm – 300 nm) and diameter (100 nm – 300 nm) in the low-temperature phase (top) and in the high-temperature phase (bottom).

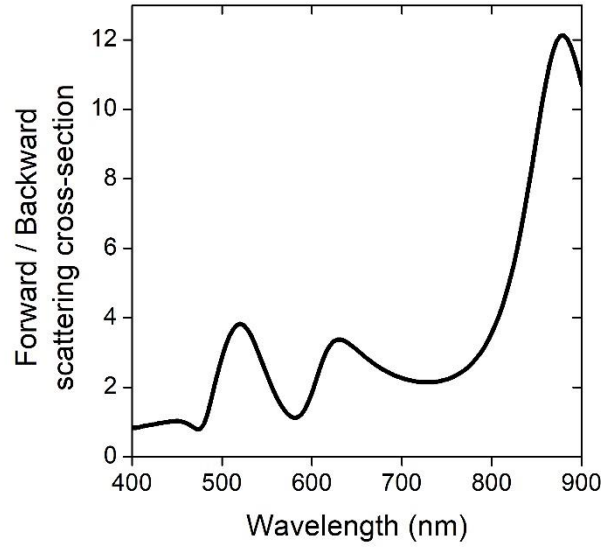


Figure S2. Forward-to-backward scattering cross-section ratio calculated for an array of VO₂ nanodiscs in the low-temperature phase (nanodisc height $h = 200$ nm, diameter $D = 270$ nm, pitch $P = 1.5D$).

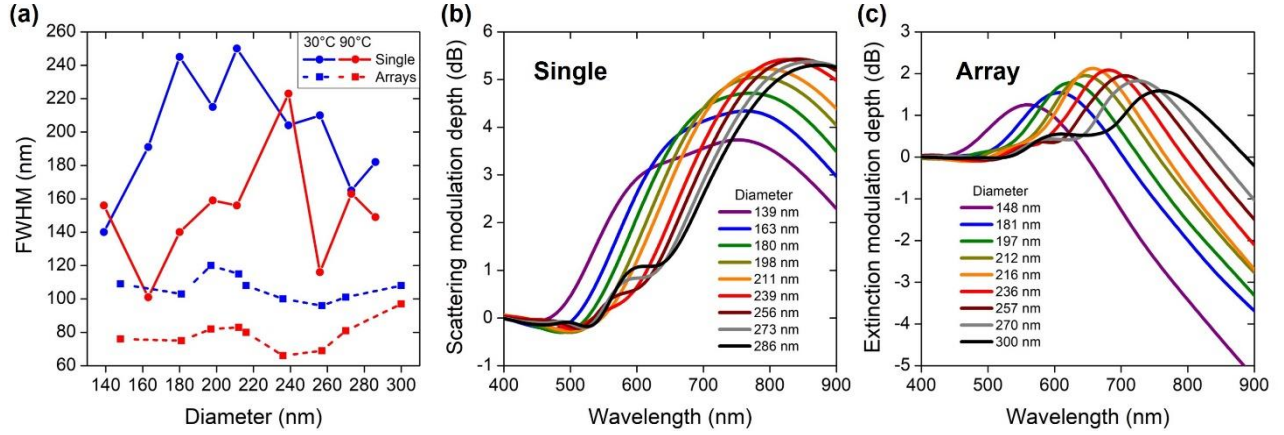


Figure S3. (a) Full width at half maximum (FWHM) of the scattering (single nanodiscs, solid lines) and extinction (nanodisc arrays, dashed lines) resonances, as extracted from Gaussian fits to the respective measured spectra shown in the main article. Note that when higher-order resonances became apparent in the spectra of larger nanodiscs, we used two Gaussian functions for the fit but we report here the FWHM only for the dipolar (long wavelength) resonance. (b,c) Modulation depths corresponding to the VO_2 phase change, defined as $10\log(I_{\text{LT}}/I_{\text{HT}})$, calculated directly from the single nanodisc scattering spectra (b) and the nanodisc array extinction spectra (c).

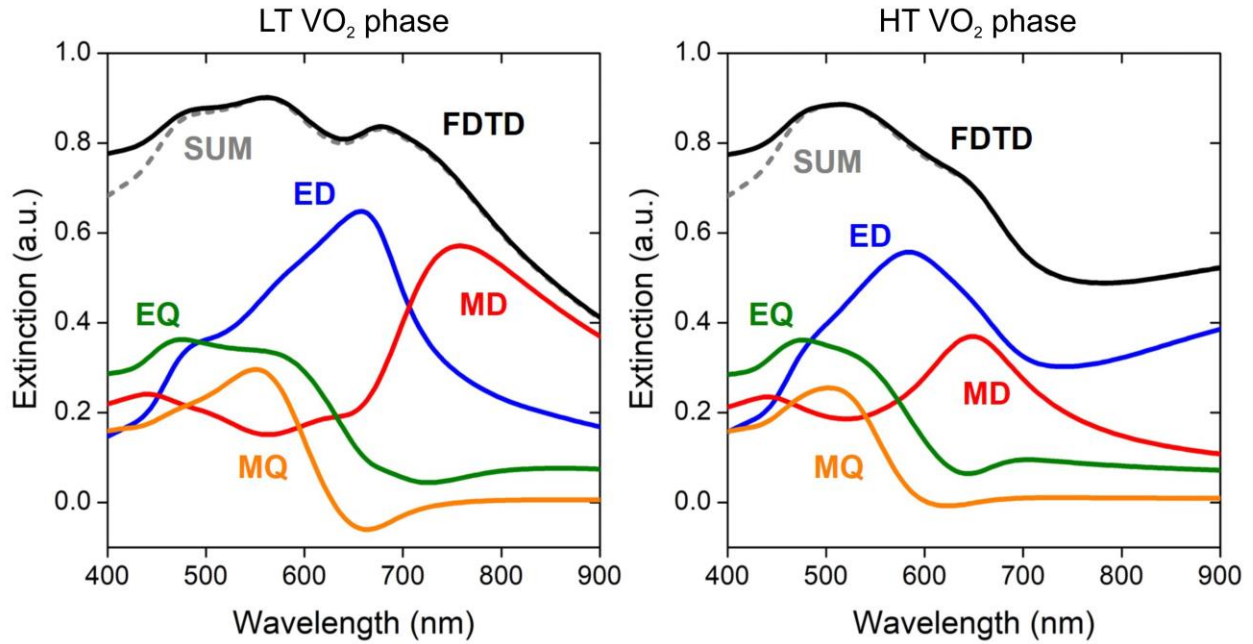


Figure S4. Multipole extinction decomposition of LT (left) and HT (right) VO_2 nanodisc array on a fused silica substrate (nanodisc height $h = 200$ nm, diameter $D = 270$ nm, pitch $P = 1.5D$).