Journal Name

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Supporting Information

Birefringence and linear dichroism of TiS_3 nanosheets

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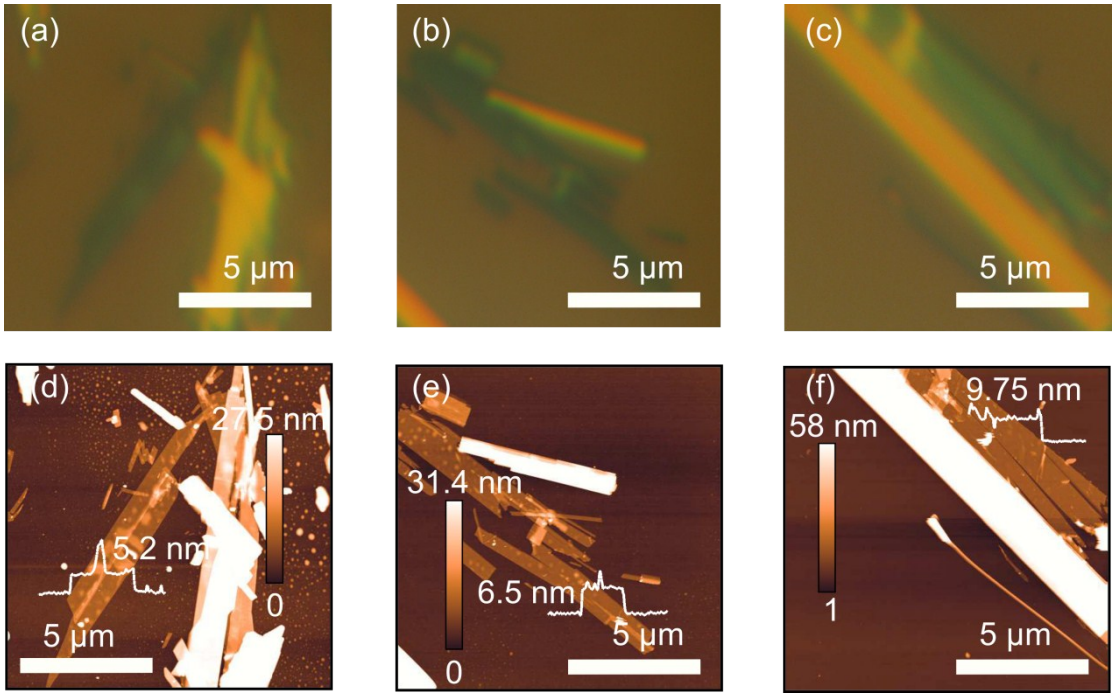

Fig. S1. Optical images (a, b and c) and AFM topography of the thin TiS_3 flakes (d, e and f). The thickness of these flakes is less than 10 nm.

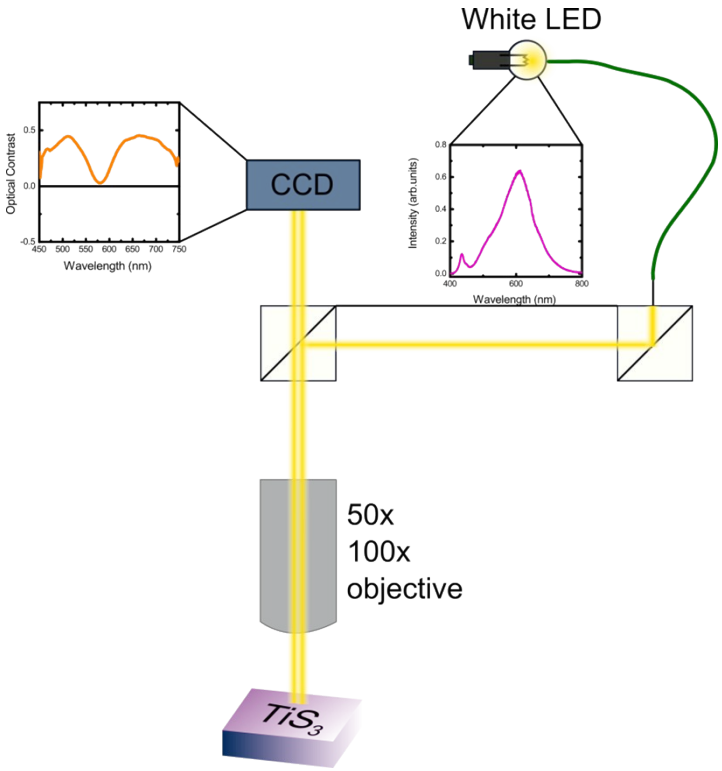

Fig. S2. Schematic of the Micro-reflectance setup used in this work.

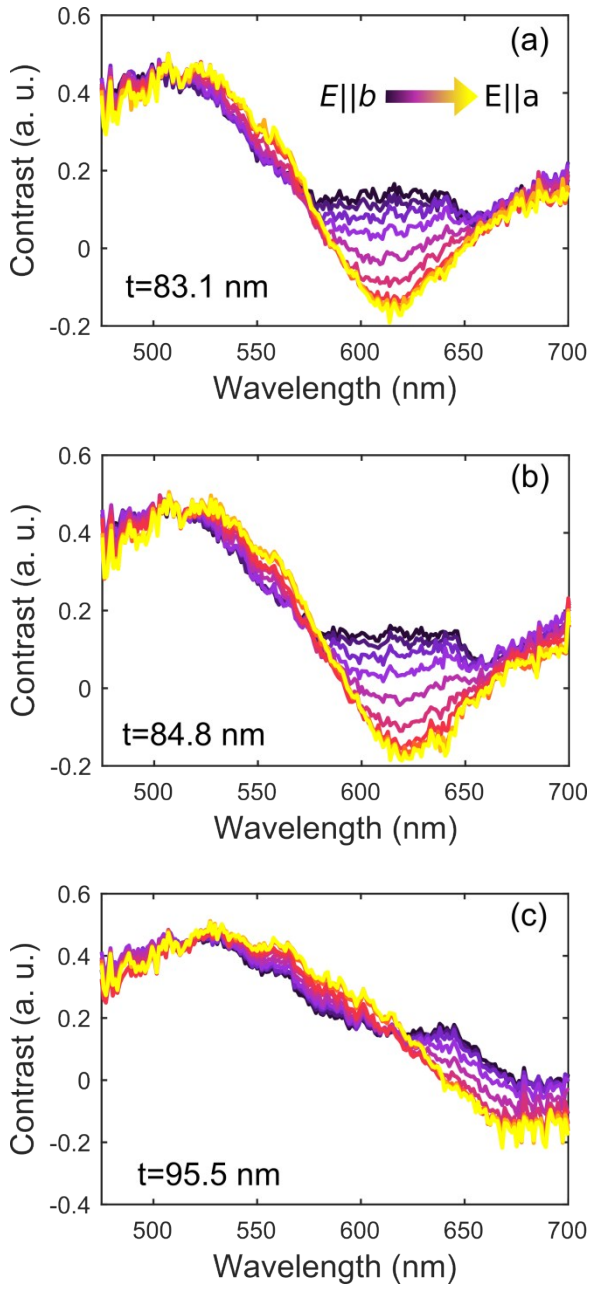

Fig. S3. (a-c) Contrast of various flakes as a function of wavelength for different polarization angles.

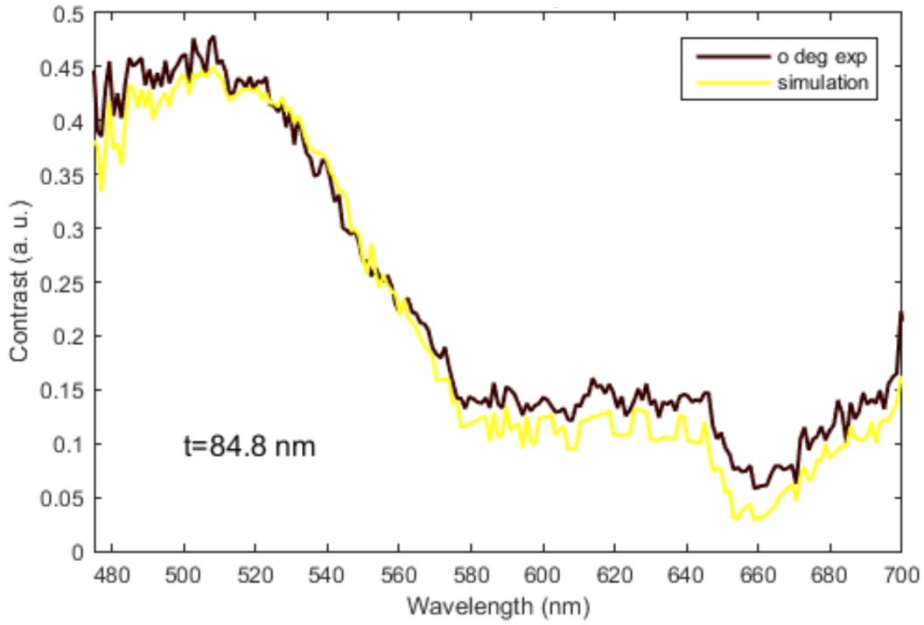

Fig. S4. Optical contrast spectra from a flake with thickness of 84.8 nm using linearly polarized light parralel to the *b*-axis. The yellow curve corresponds to the simulated spectra based on the Fresnel model using the obtained values of the refractive index that are shown in Fig.5.

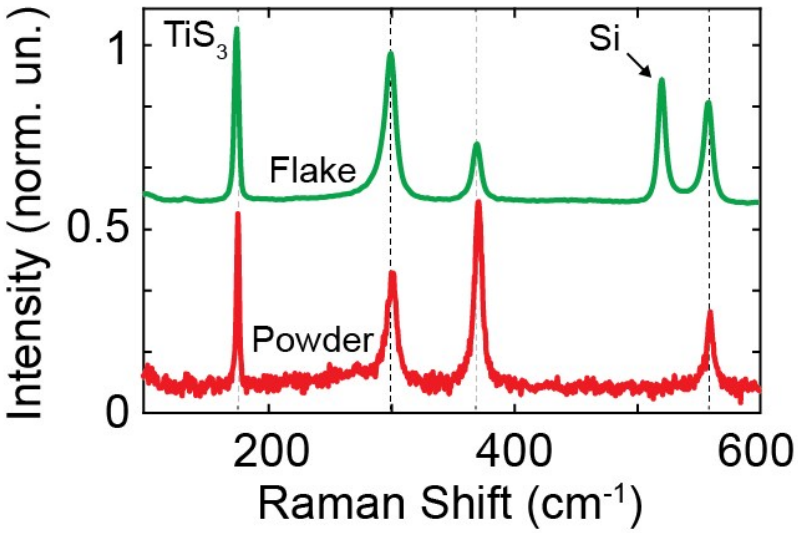

Fig. S5. Raman spectra of a TiS_3 nanoribbon on SiO_2/Si substrate (top) and of TiS_3 powder (bottom). The spectra show similar peaks due to TiS_3 vibrations.The spectrum of the individual TiS_3 flake shows an additional peak at 520 cm^{-1} due to the Si substrate. While the energy of the peaks does not change when going from powder to an individual nanoribbon, the relative intensity

of the peaks is different. This change is due to the different thicknesses probed in the powder sample compared to the individual flake.

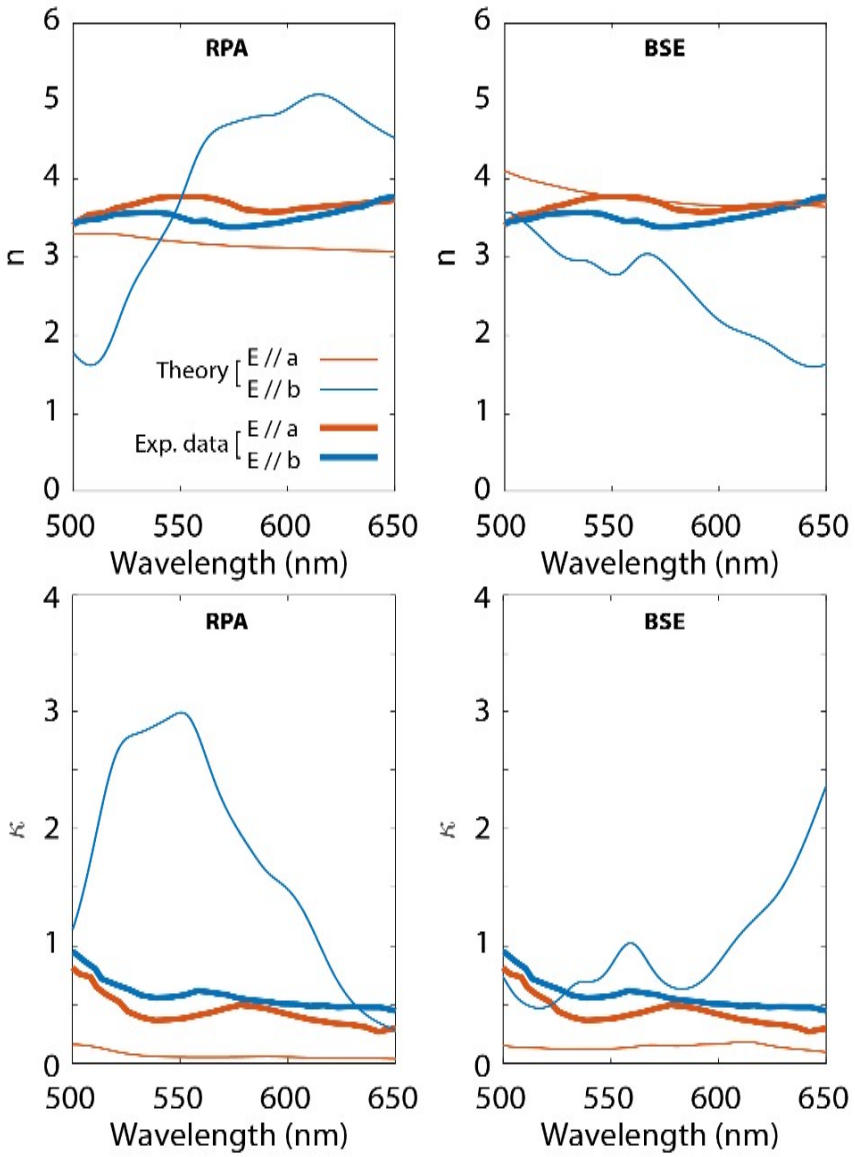

Fig. S6. Comparison between the two components of the polarized complex refractive index extracted from the measurements (thick lines) and calculated with *ab initio* calculations (RPA left, BSE right).