

Electronic supplementary information for

**Nanocrystals in Compression: Unexpected Structural
Phase Transition and Amorphization due to Surface
Impurities**

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Supplementary Figures

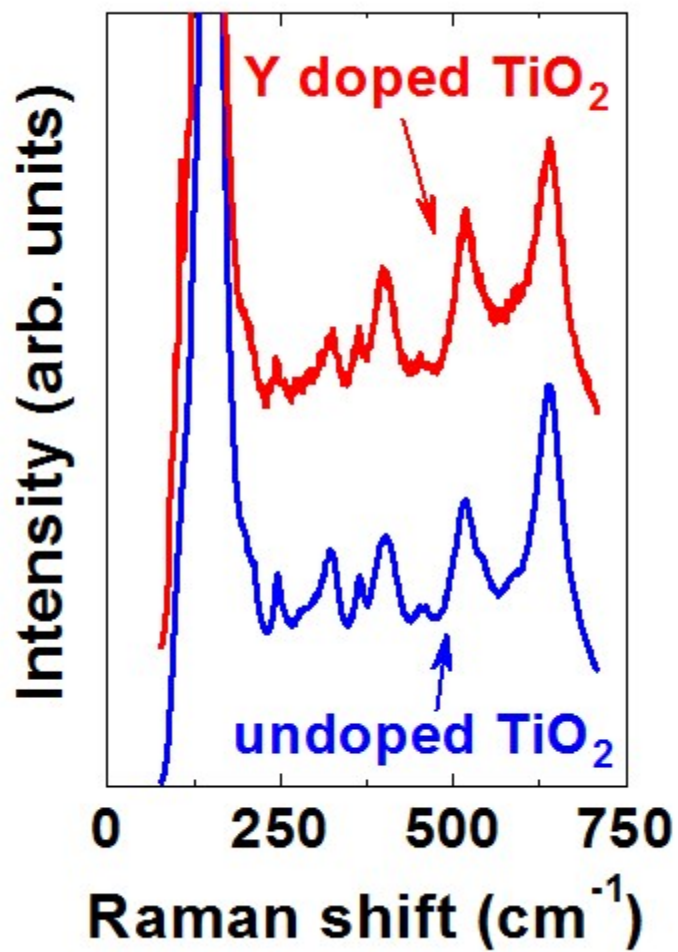


Figure S1. Raman spectra collected at ambient condition for yttrium doped and undoped TiO₂ nanocrystals.

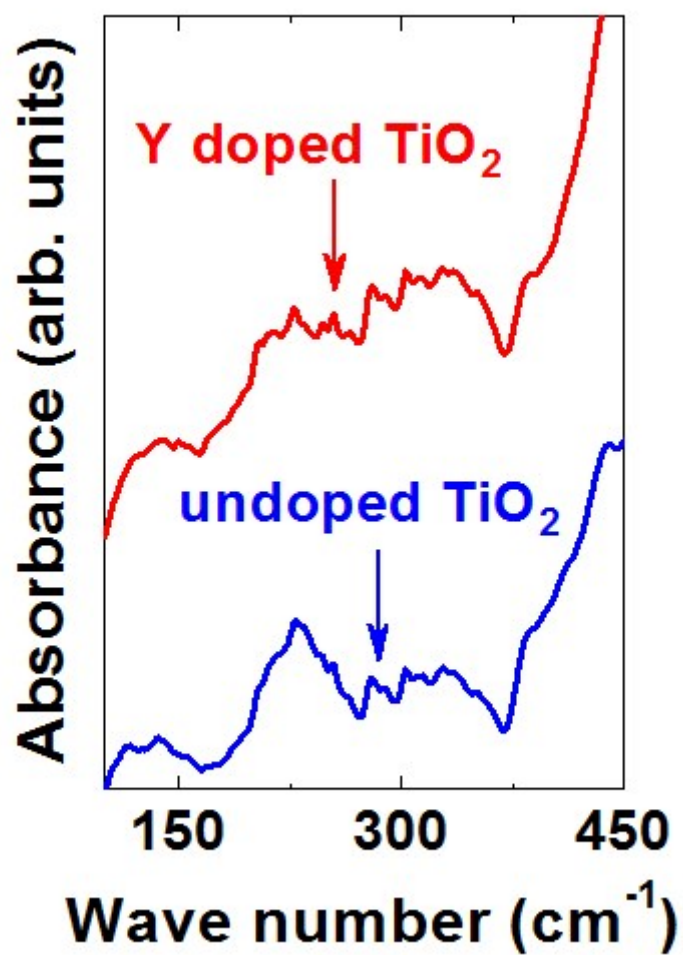


Figure S2. IR spectra collected at ambient condition for yttrium doped and undoped TiO_2 nanocrystals.

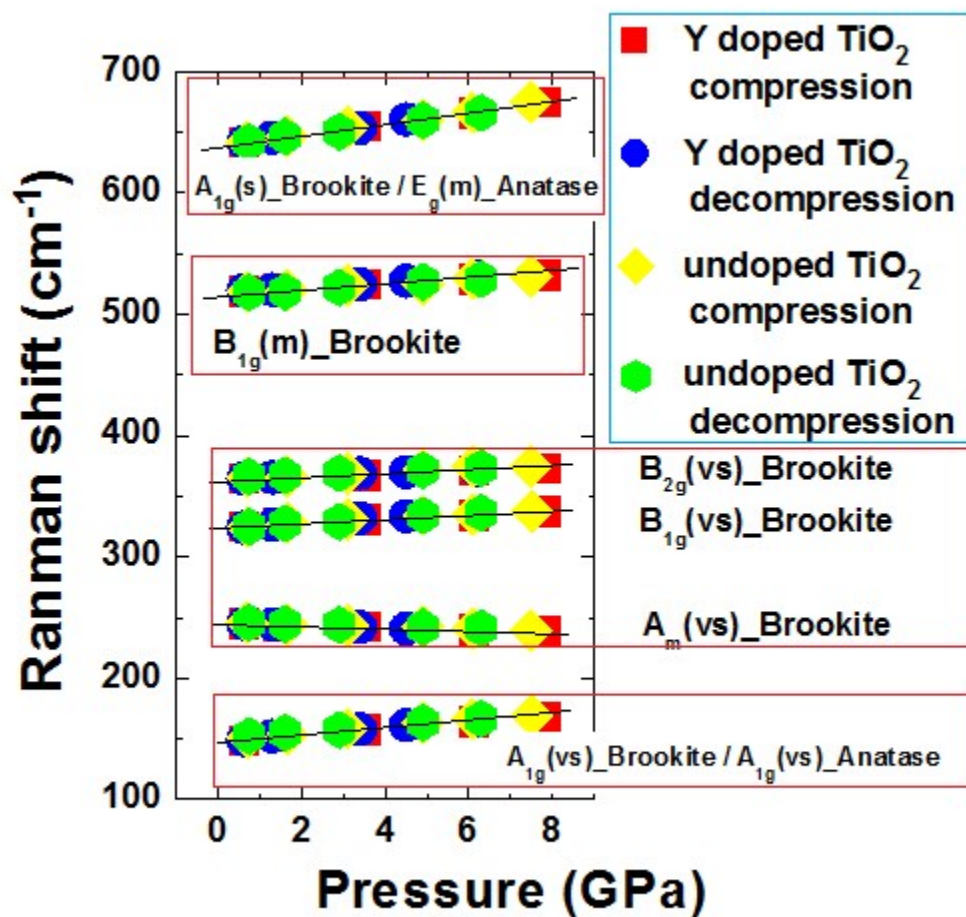


Figure S3. Pressure-dependent Raman shift during compression and decompression.

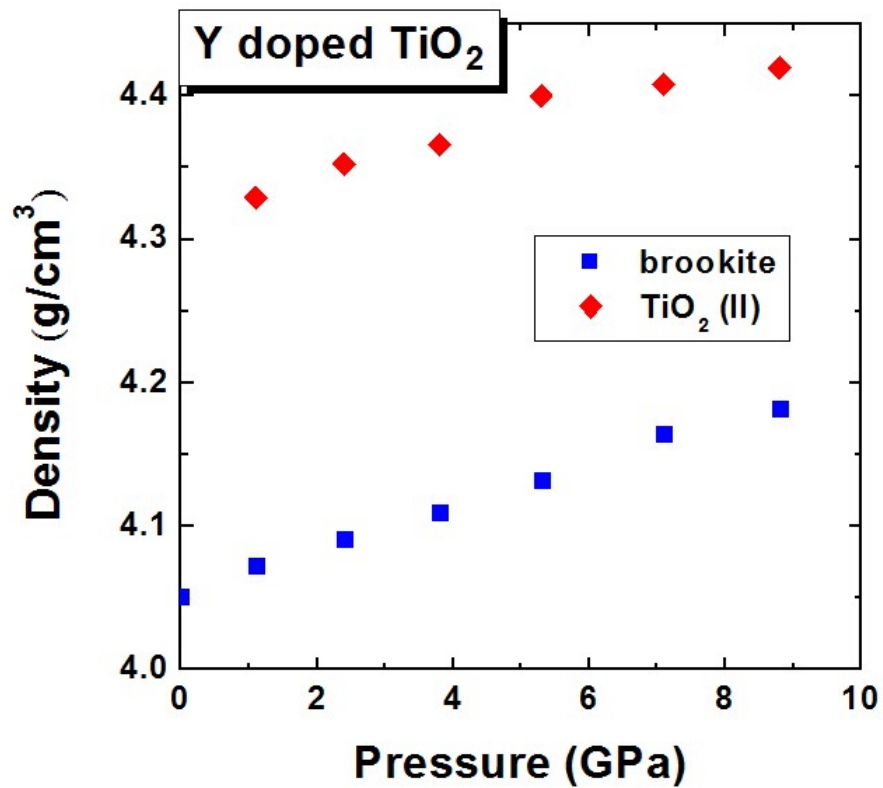


Figure S4. Pressure dependence of densities of parent brookite phase and pressure induced TiO₂(II) phase in yttrium doped TiO₂ nanoparticles. The density values are obtained from GSAS refined volume and theoretical molecular mass of TiO₂, 79.866 g/mol.