## **Supplementry Information**

## Anharmonicity Induced Faster Decay of Hot Phonons in Rutile TiO<sub>2</sub> Nanorods: A Raman Spectromicroscopic study

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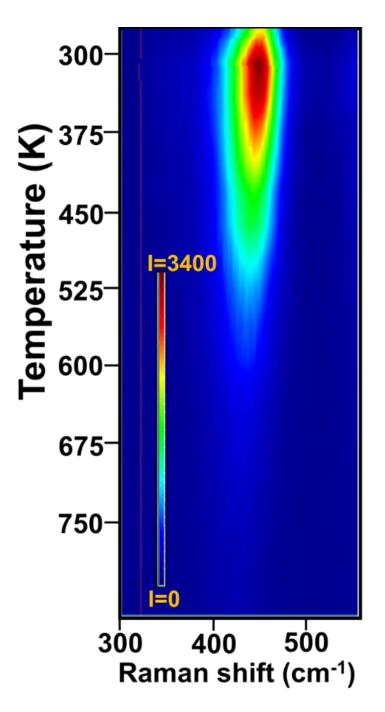


Figure S1: Zoomed version of thermal Raman map (Figure 3, main text) of  $E_g$  Raman mode of rutile TiO<sub>2</sub> nanorods.

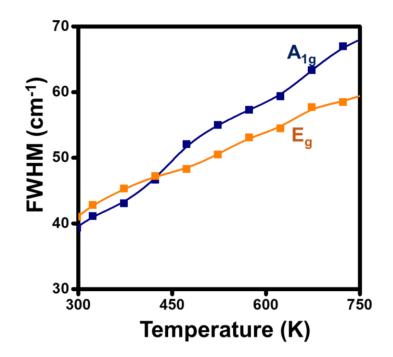


Figure S2: FWHM vs. Temperature from the range room temperature (300K) to High temperature (750K) for both Raman modes ( $E_g$  and  $A_{1g}$ ) of rutile TNRs.

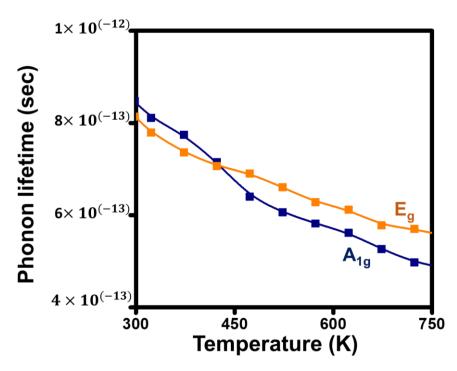


Figure S3: Phonon lifetime vs. Temperature from the range room temperature (300K) to High temperature (750K) for both Raman modes ( $E_g$  and  $A_{1g}$ ) of rutile TNRs.