Supporting Information

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Ultrahigh Infrared Photoresponse in Titanium Sesquioxide at
Mott-Insulator Transition

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Pramod Kumar, and Abha Misra**

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Figure S1. Zeta potential analysis (Zeta Phase Analysis Light Scattering) of TNPs.

Figure S2. (a) Scanning TEM image and (b,c and d) the corresponding elemental mapping of a TNP.

Figure S3. (a) I – V with temperature sweep from 77–400 K for 50 μm channel length device (inset: I – V in log–scale).

Figure S4. Raman spectra of TNPs at 300 K.

Figure S5. Absorption spectra of TNPs in the range 750–1500 nm.

Figure S6. IR photoresponse at 400 K for different incident powers (a) 0.75, (b) 1.49 and (c) 1.77 mW.

Table 1

Wavelength (nm)	1064
Output power from laser, P_{out} (mW)	265
Laser spot size, A (mm ²)	~4.95
Film area (mm ²)	~9.033
Active area, S (mm ²)	~0.033
Incident power, ($P_{inc} = \frac{P_{out}}{A} \times S$) (mW)	~1.77

Table 2

Thermal condition (K)	Value of lattice constant 'c' (Å)
300 K	13.70369
400 K	13.72884
300 K ramp down	13.68990