

## Emergence of strong room-temperature ferroelectricity and multiferroicity in 2D-Ti<sub>3</sub>C<sub>2</sub>T<sub>x</sub> free-standing MXene film

Rabia Tahir, Syedah Afsheen Zahra, Usman Naeem, Syed Rizwan\*

Physics Characterization and Simulations Lab (PCSL), Department of Physics, School of Natural Sciences, National University of Sciences and Technology (NUST), H-12 Islamabad, Pakistan

**Corresponding author:** Syed Rizwan; Email: [syedrizwan@sns.nust.edu.pk](mailto:syedrizwan@sns.nust.edu.pk),

[syedrizwanh83@gmail.com](mailto:syedrizwanh83@gmail.com)

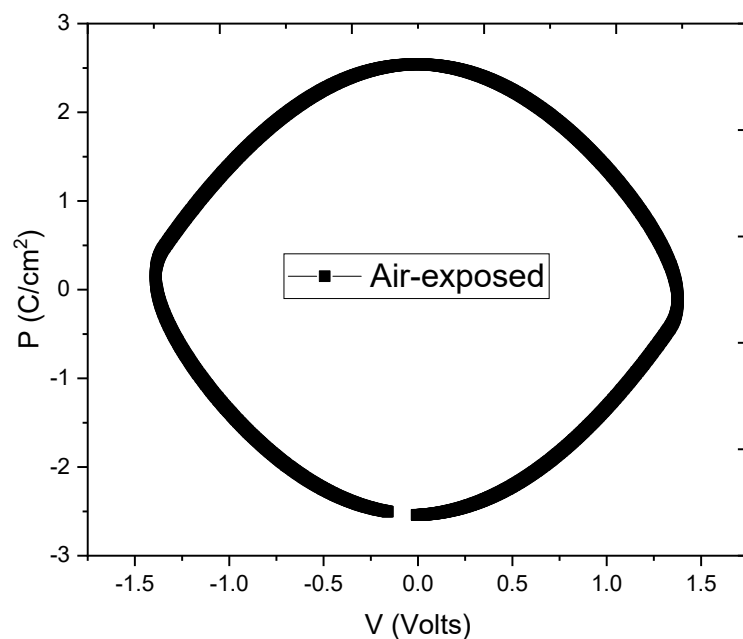


Figure S1-a: Polarization-voltage curve for air-exposed Ti<sub>3</sub>C<sub>2</sub>T<sub>x</sub> film at room-temperature showing a non-ferroelectric effect.

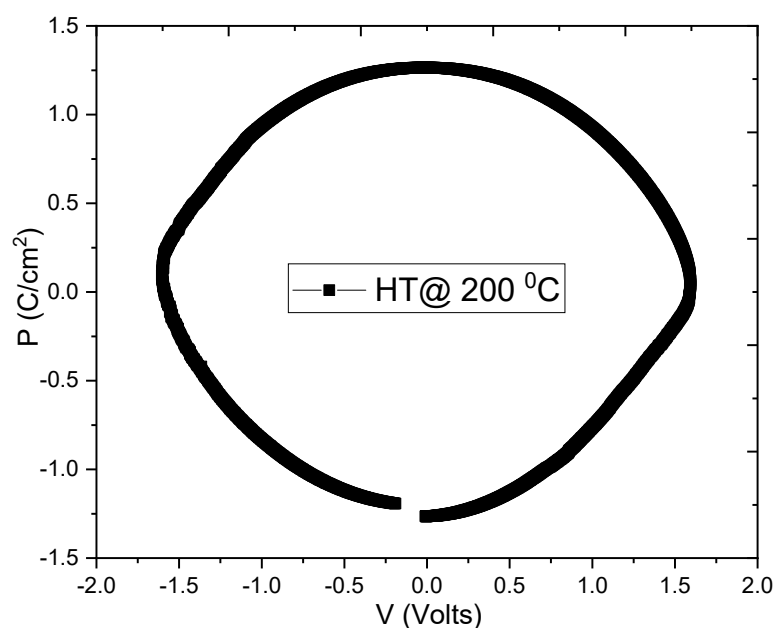


Figure S1-b: Polarization-voltage curve for air-exposed Ti<sub>3</sub>C<sub>2</sub>T<sub>x</sub> film at room-temperature showing a non-ferroelectric effect.