

## **Supplementary Information**

### **Resistance of Superhydrophobic Surface-Functionalized TiO<sub>2</sub> Nanotubes to Corrosion and Intense Cavitation**

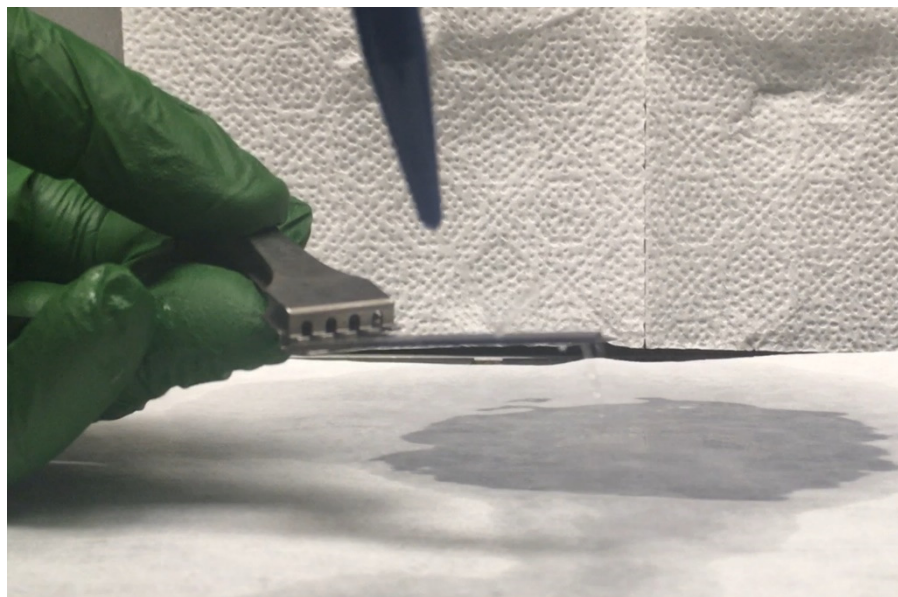
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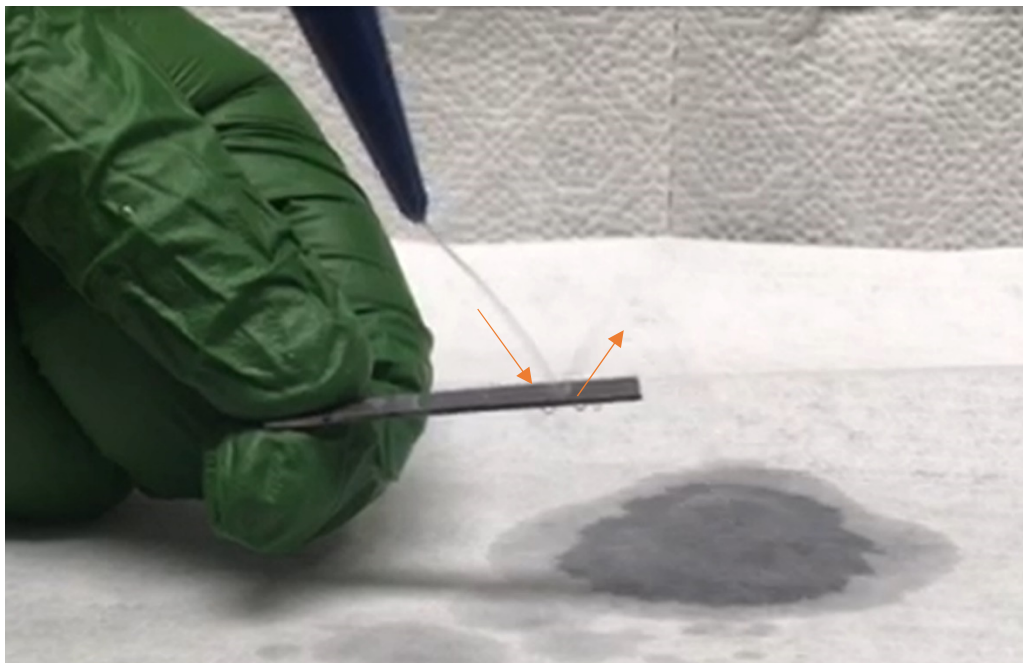
<sup>2</sup>*Department of Chemistry, Central University of Rajasthan, NH-8, Bandar Sindri, Rajasthan 305817, India*

†Authors who contributed equally.

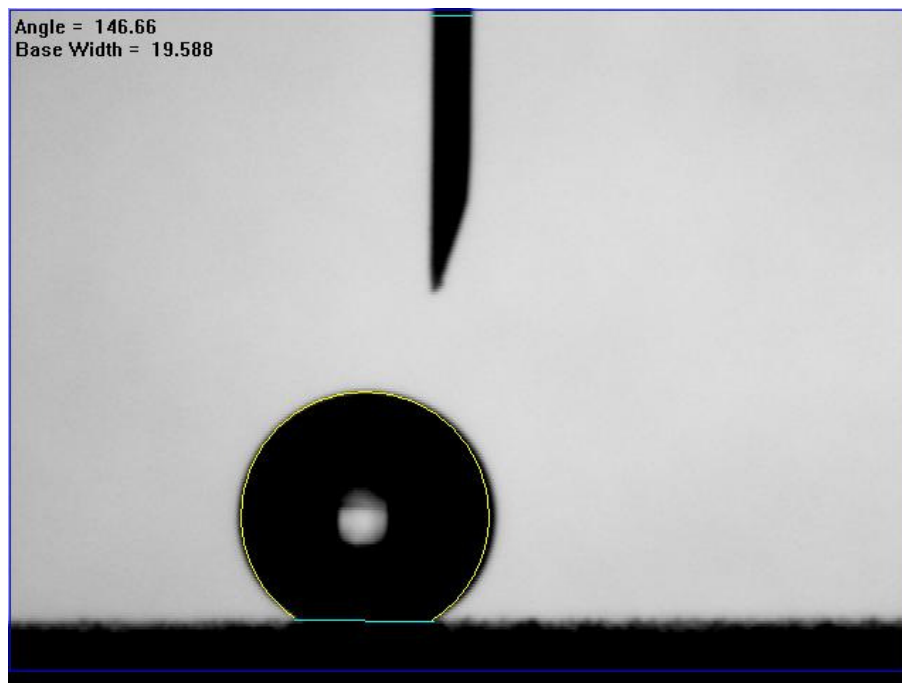
\*Email: [kshankar@ualberta.ca](mailto:kshankar@ualberta.ca)



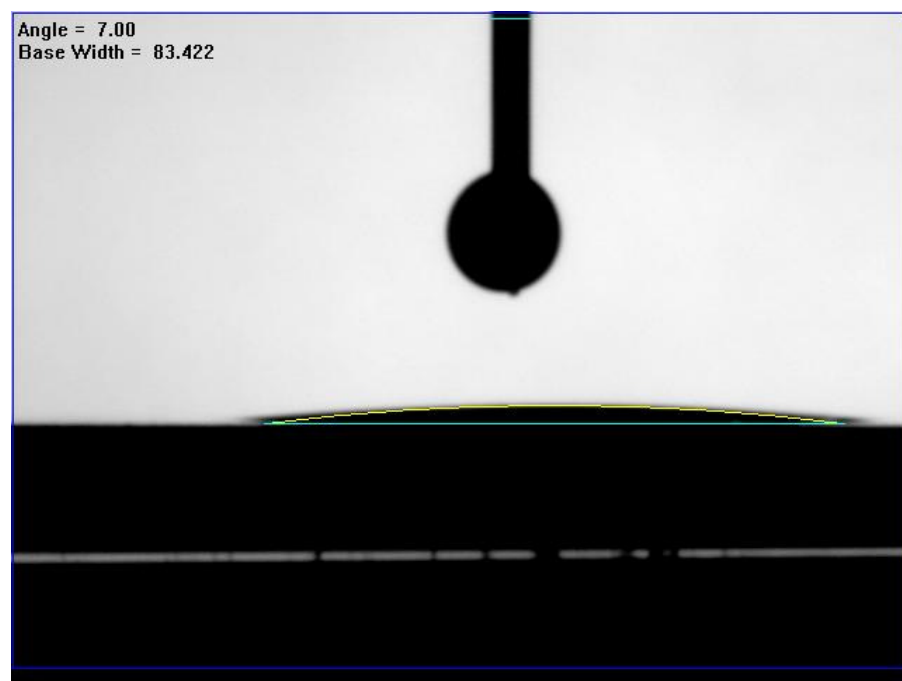
**Figure S1.** The water repelling tendency of the ODPF functionalized TNAs surface before ultrasonic wave treatment.



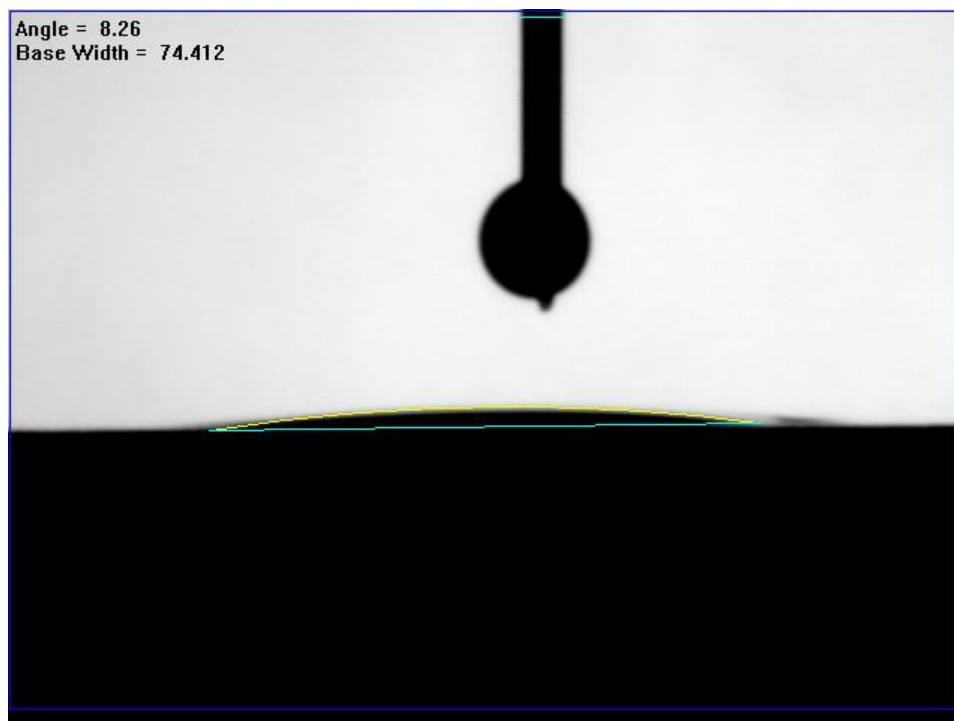
**Figure S2.** Resilience of the superhydrophobic character of an ODPA coated TNTA surface following long time exposure to ambient environment after ultrasonic treatment.



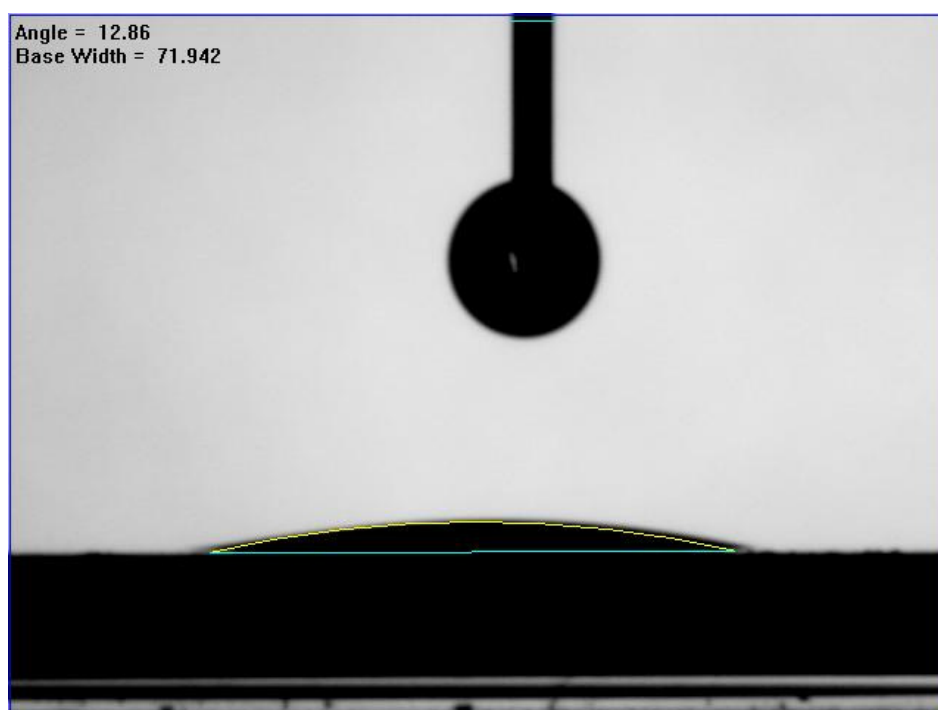
(a)



(b)

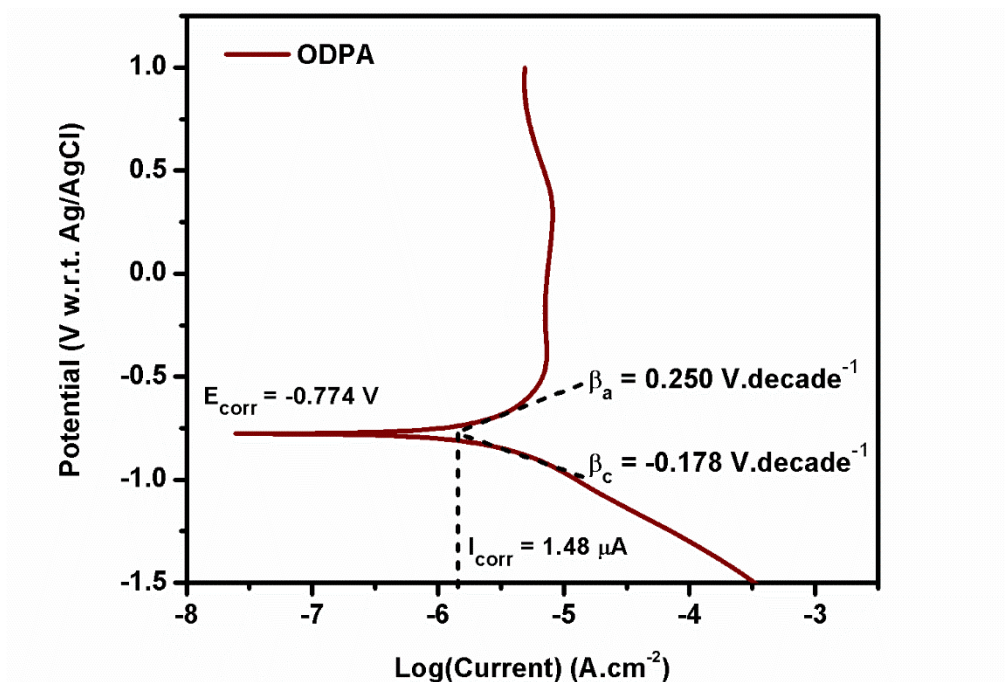


(c)

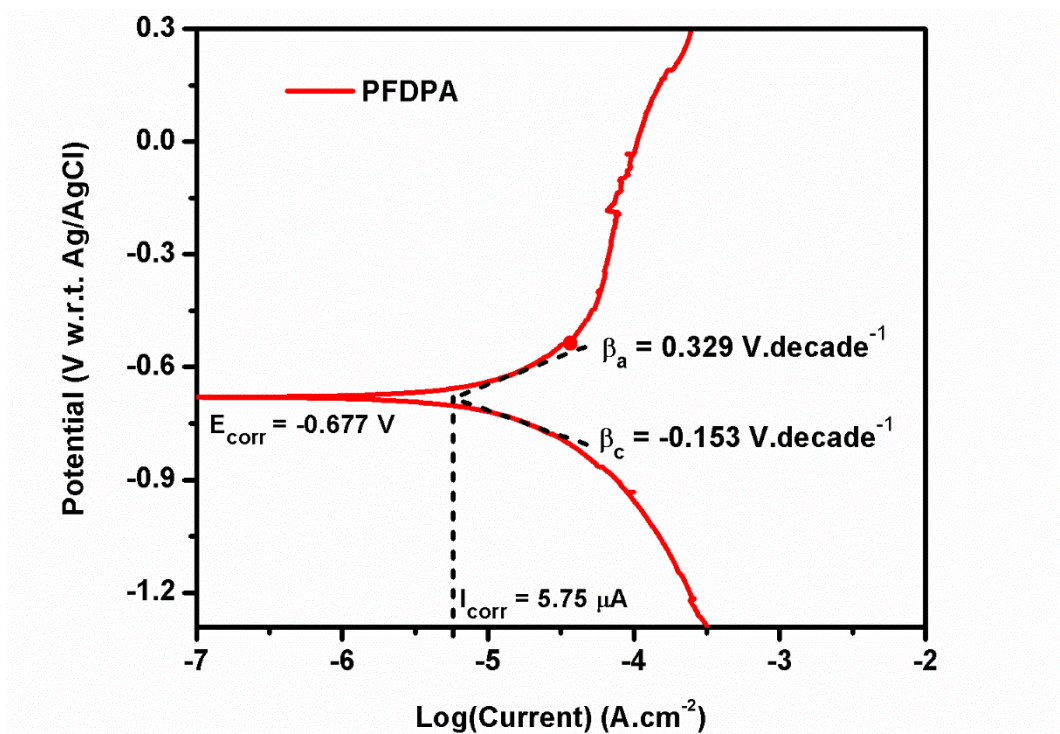


(d)

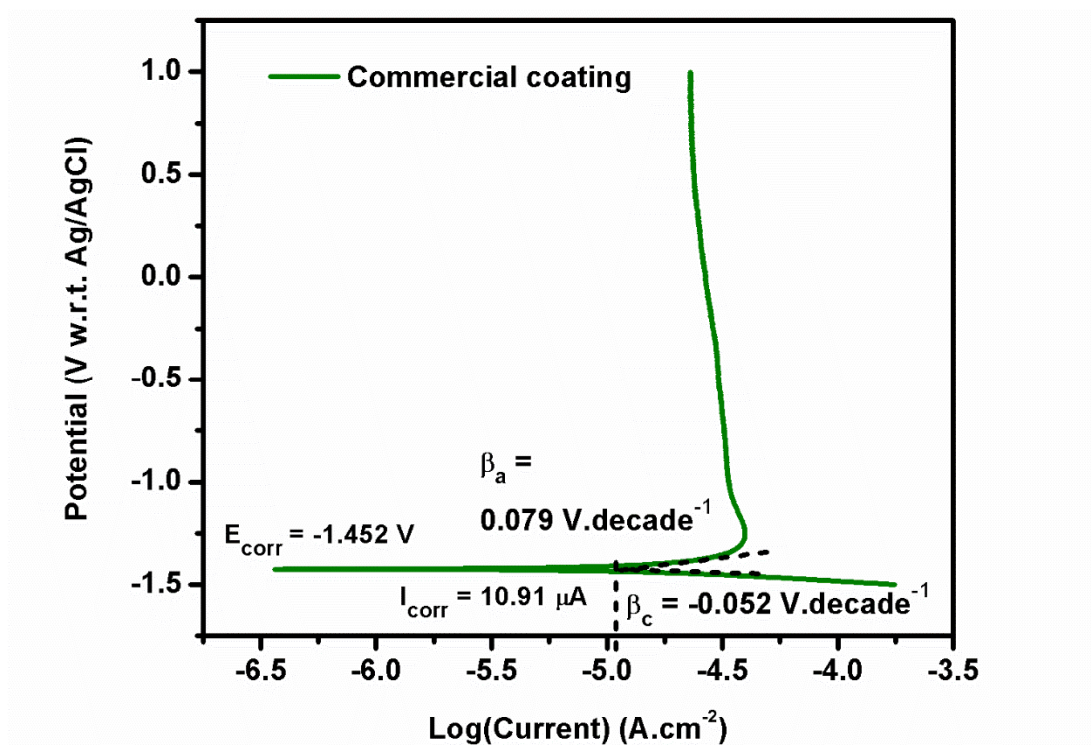
**Figure S3.** (a) Contact angles of commercial coating incorporated TiO<sub>2</sub> nanotube arrays. (a) Before ultrasonication; (b) and (c) After ultrasonication in water for 10 and 60 minutes, respectively. (d) After ultrasonication in methanol for 10 minutes.



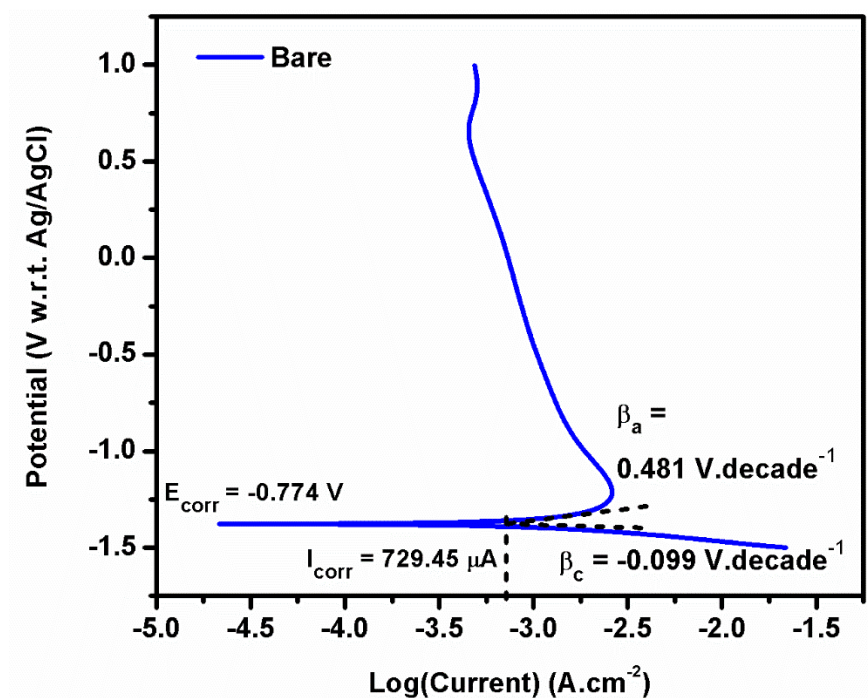
(a)



(b)

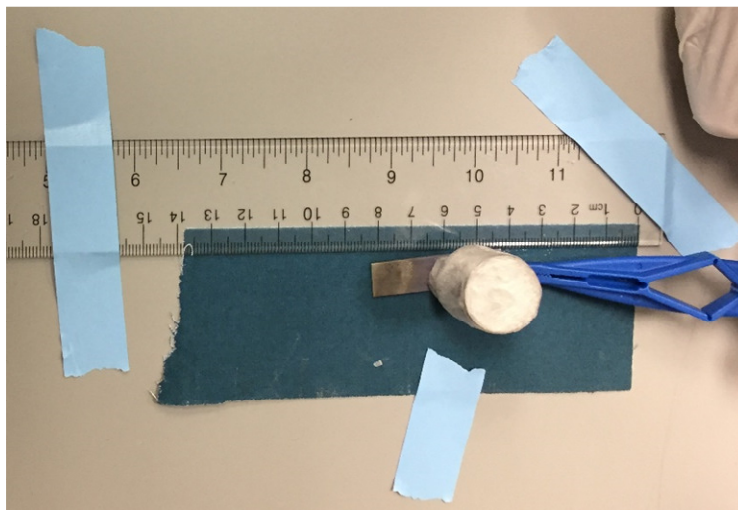


(c)



(d)

**Figure S4.** Tafel plots showing the values Tafel constants,  $E_{\text{corr}}$  and  $I_{\text{corr}}$  for (a) ODPA SAM (b) PFDPA SAM (c) commercial coating and (d) bare  $\text{TiO}_2$  nanotubes.



**Figure S5.** Photograph of abrasion test in process. A 50 gram weight is placed on the SAM-coated TNTA sample and then the sample is pushed across a 320-grit sand paper for a distance of 5 cm using a pair of (blue colored) tweezers.