

Supporting Information

Three-Dimensional Inverse Opal TiO₂ Coatings to Enable the Gliding of Viscous Oils

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Video S1. The rapid gliding of heavy oil off of the 3D inverse opal titania coating. The coating was prepared using a 1:1 (v/v) of TiO₂:PS colloidal dispersions and further functionalized with PFOPA.

Video S2. Heavy oil on an unfunctionalized steel substrate.

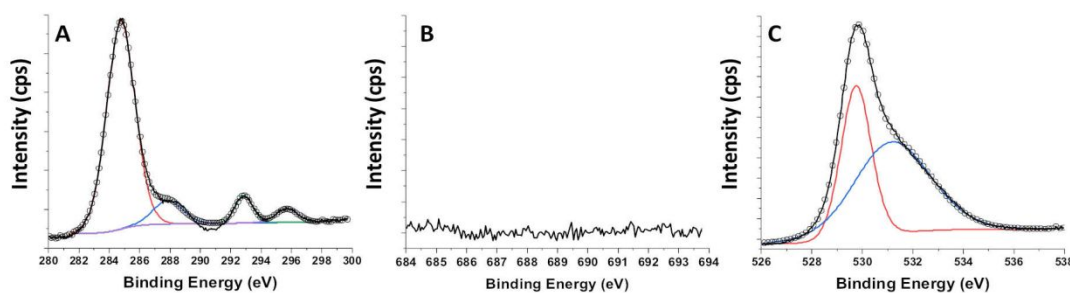


Figure S1. XPS spectra of 1500 nm TiO₂ particles acquired in (A) C 1s (red: adventitious C, blue: K⁺ 2p_{3/2}, teal: K⁺ 2p_{1/2}, pink: O-C/O-C=O) (B) F 1s and (C) O 1s (red: lattice O, blue: Ti-OH) regions.

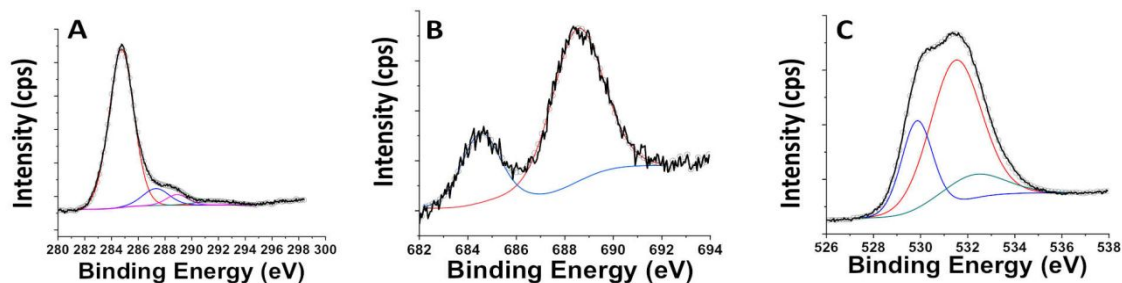


Figure S2. XPS spectra of PFOPA acquired in (A) C 1s (red: C-H/C-C, teal: $-\text{CF}_2\text{-CH}_2\text{-}$, pink: O-C/O-C=O, blue: C-P/ $-\text{CH}_2\text{-CF}_2\text{-}$) (B) F 1s (red: $-\text{CF}_2\text{-CF}_3$, blue: F⁻) and (C) O 1s (red: P=O, blue: P-O, teal: P-OH) regions.