The hypersaline synthesis of titania: From powders to aerogels

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ELECTRONIC SUPPORTING INFORMATION

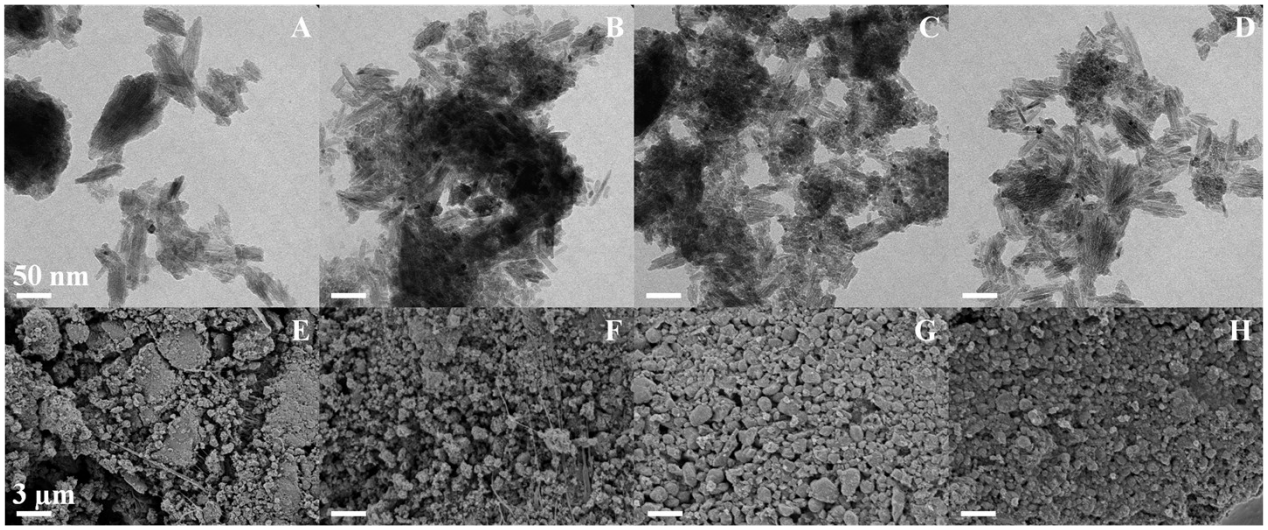


Fig. S1. TEM (upper row) and SEM pictures (lower row) of salt-templated titania powders. From left to right: SaTi-Na-0.5 (A, E), SaTi-Na-1 (B, F), SaTi-Na-3 (C, G) and SaTi-K-2 (D, H).

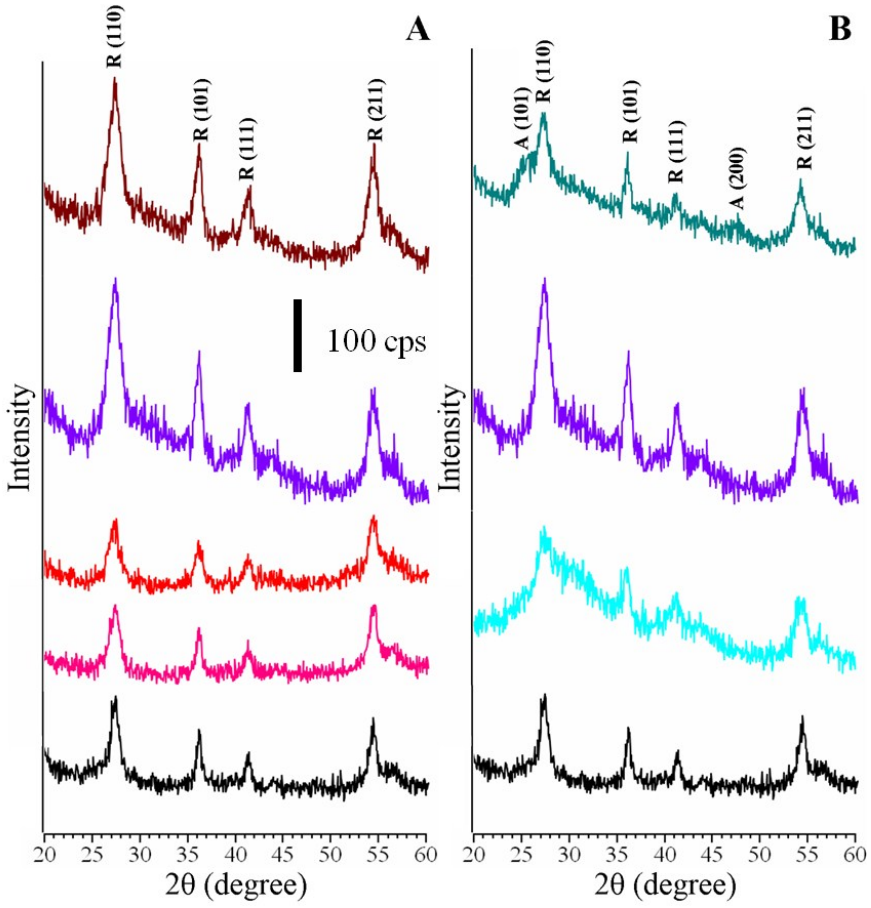
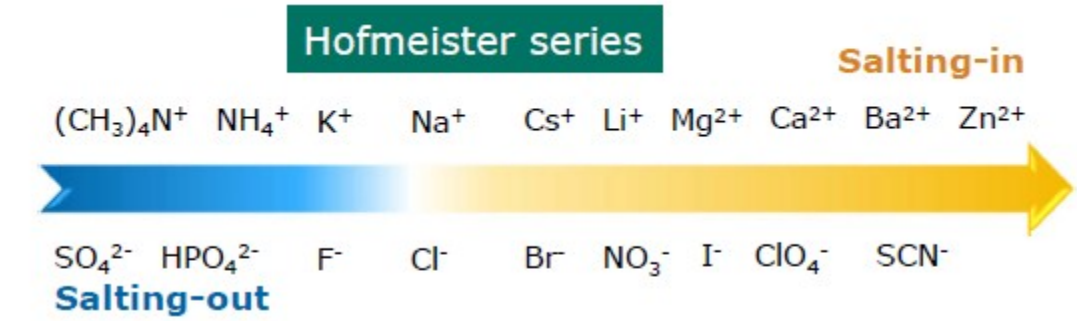


Fig. S2. WAXS patterns of the washed titania powders at varying amount (A, left) and nature (B, right) of the salt-porogen: SaTi-0-0 (black), SaTi-Na-0.5 (pink), SaTi-Na-1 (red), SaTi-Na-2 (violet), SaTi-Na-3 (brown), SaTi-K-2 (light cyan), SaTi-Li-2 (dark cyan).



Scheme S1. Hofmeister series of the most commonly used inorganic ions. The arrow indicates the transition from salting-out ions (blue branch) to salting-in ions (yellow branch), with strong salting-out ions on the left and strong salting-in ions on the right.

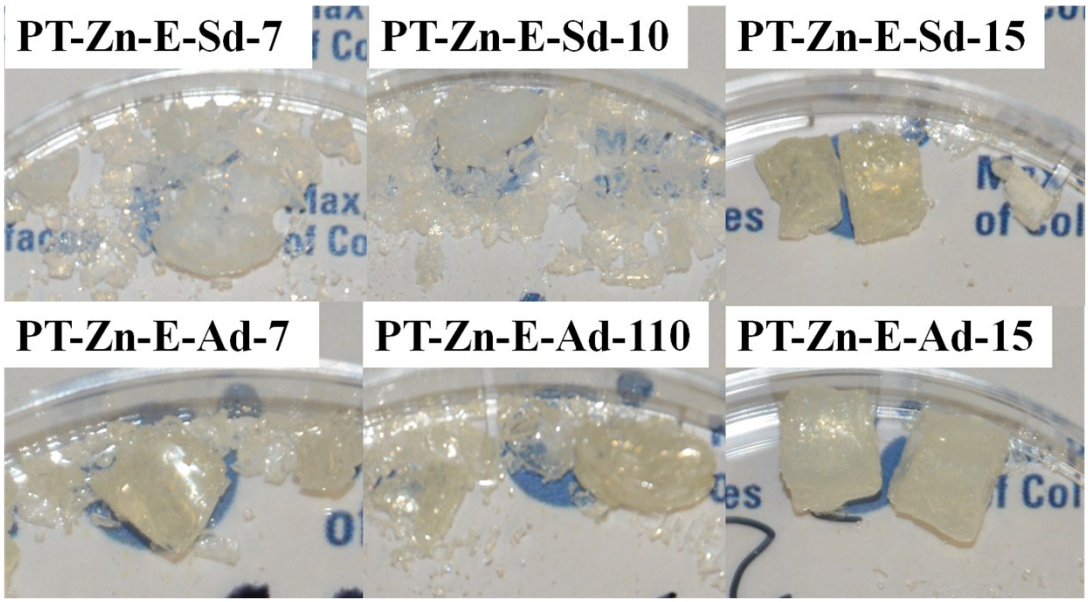


Fig. S3. Images of Zn-templated titania CO_2 supercritical dried (top) and RT ambient pressure air (bottom) obtained in ethanol.

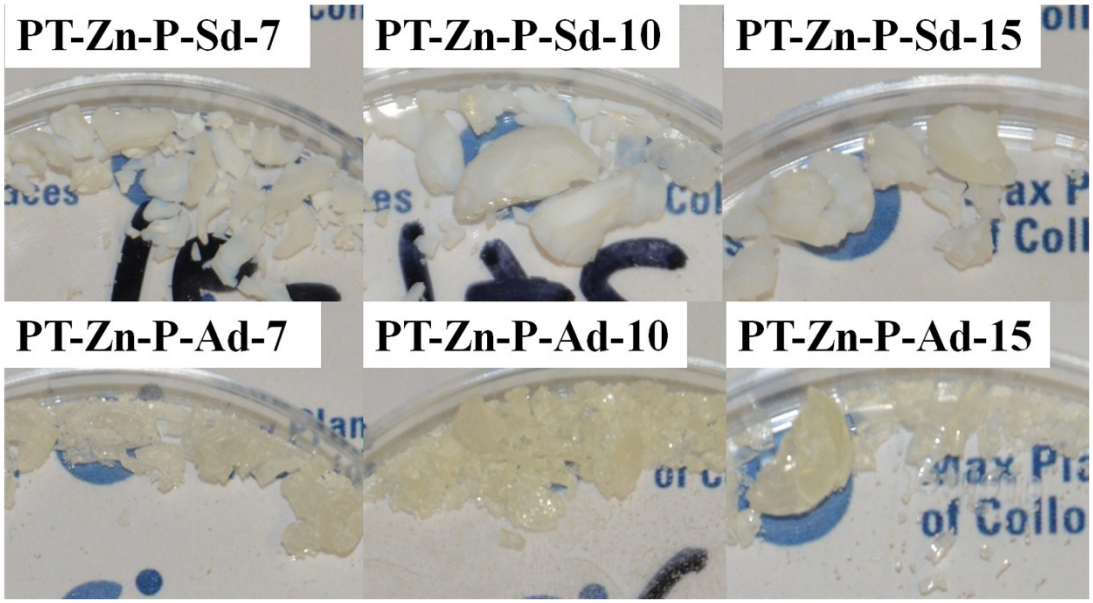


Fig. S4. Images of Zn-templated titania CO_2 supercritical dried (top) and RT ambient pressure air dried (bottom) obtained in 2-propanol.

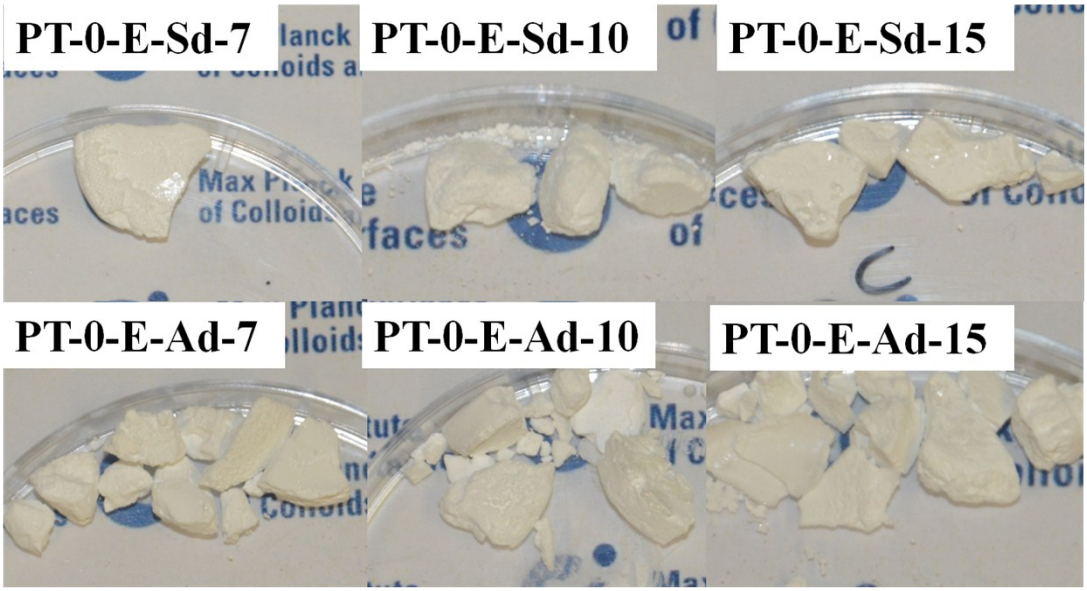


Fig. S5. Images of reference titania CO_2 supercritical dried (top) and RT ambient pressure air dried (bottom) obtained in ethanol.

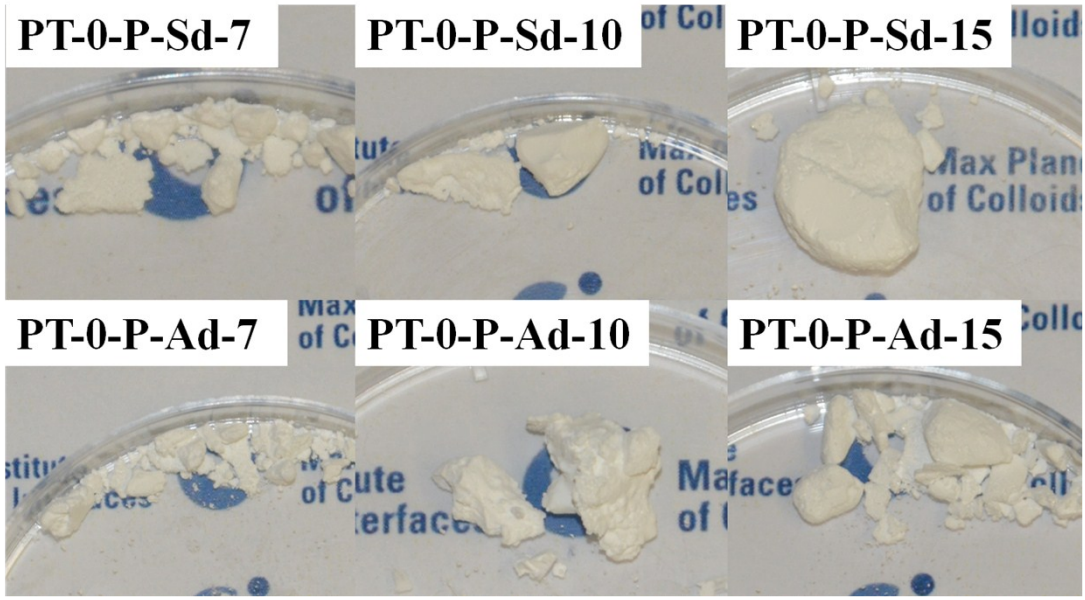


Fig. S6. Images of reference titania CO_2 supercritical dried (top) and RT ambient pressure air dried (bottom) obtained in 2-propanol.

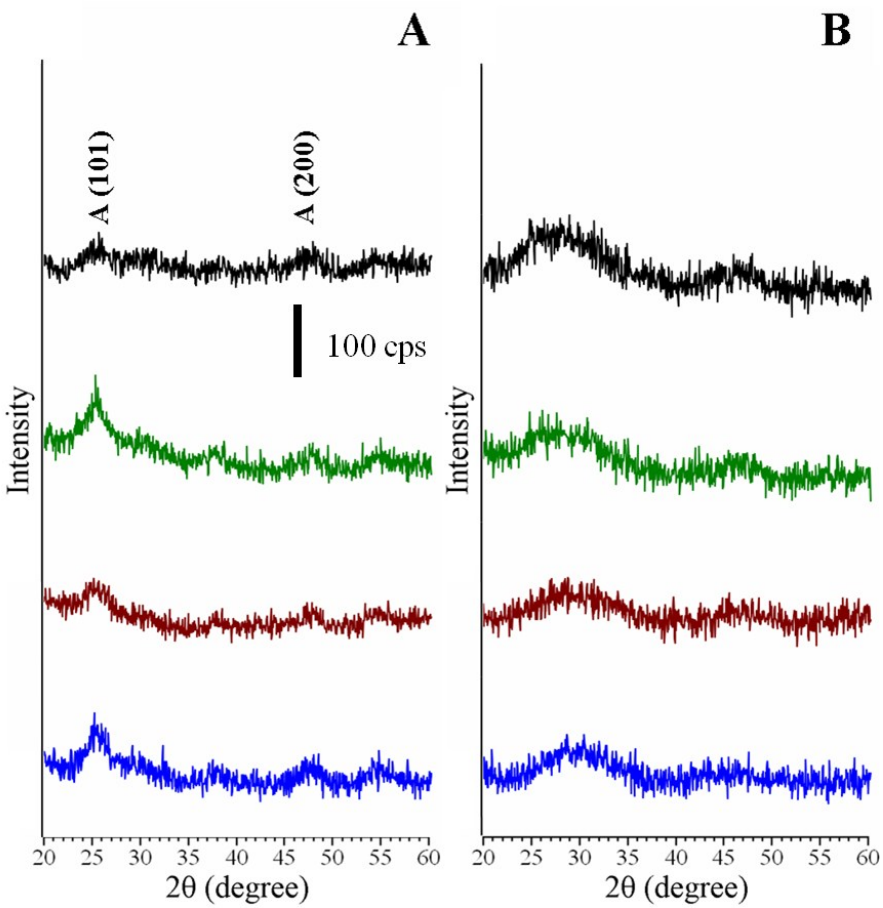


Fig. S7. WAXS patterns of Zn-templated (section A) and reference titania (section B) CO_2 supercritical dried and RT ambient pressure air dried obtained in ethanol and 2-propanol collected after 15 days of aging time: PT-Zn-E-Sd-15 (A, blue), PT-Zn-E-Ad-15 (A, brown), PT-Zn-P-Sd-15 (A, dark green), PT-Zn-P-Ad-15 (A, black), PT-0-E-Sd-15 (B, blue), PT-0-E-Ad-15 (B, brown), PT-0-P-Sd-15 (B, dark green), PT-0-P-Ad-15 (B, black).

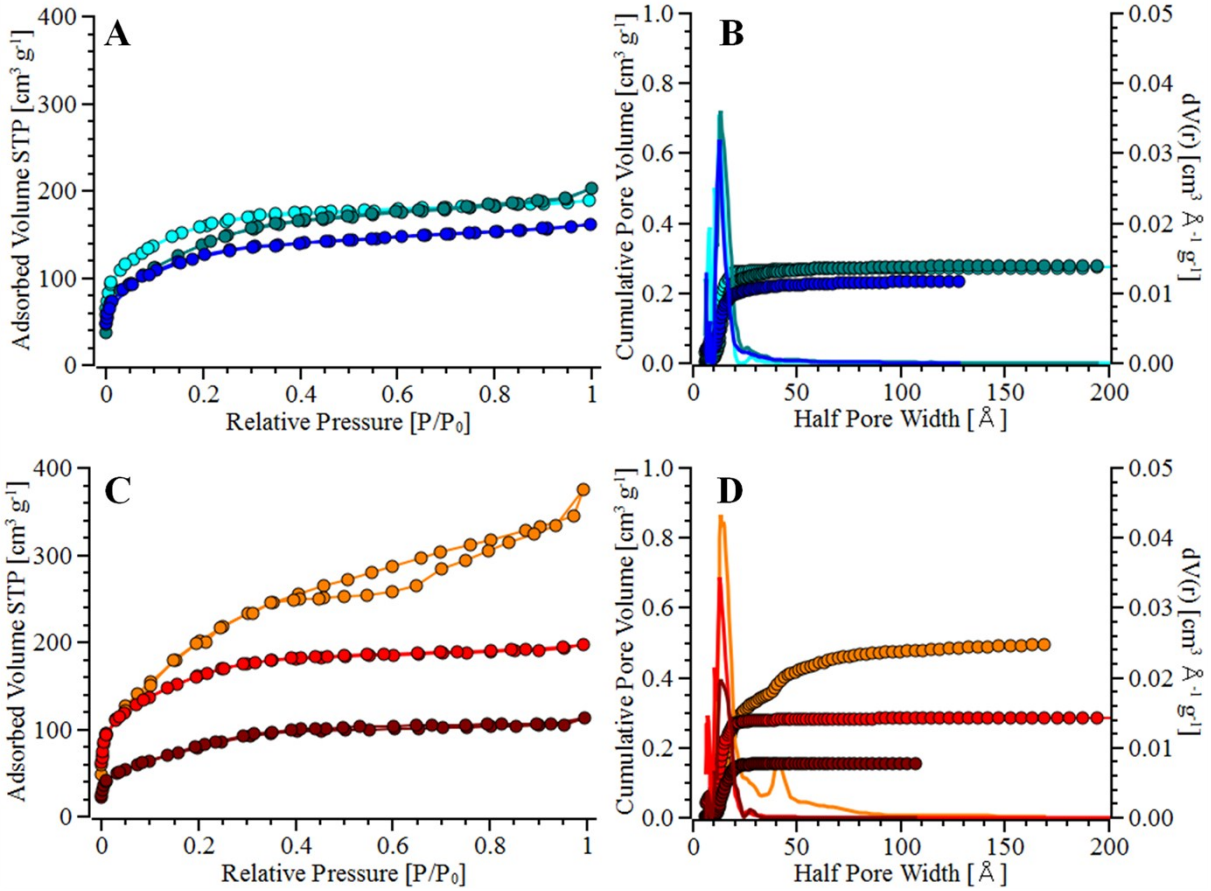


Fig. S8. Nitrogen sorption isotherms (left) and pore size distribution (right) of reference titania obtained in ethanol CO_2 supercritical dried (A,B) and RT ambient pressure air dried (C,D) at varying aging time: PT-0-E-Sd-7 (light cyan), PT-0-E-Sd-10 (dark cyan), PT-0-E-Sd-15 (blue), PT-0-E-Ad-7 (orange), PT-0-E-Ad-10 (red), PT-0-E-Ad-15 (brown).

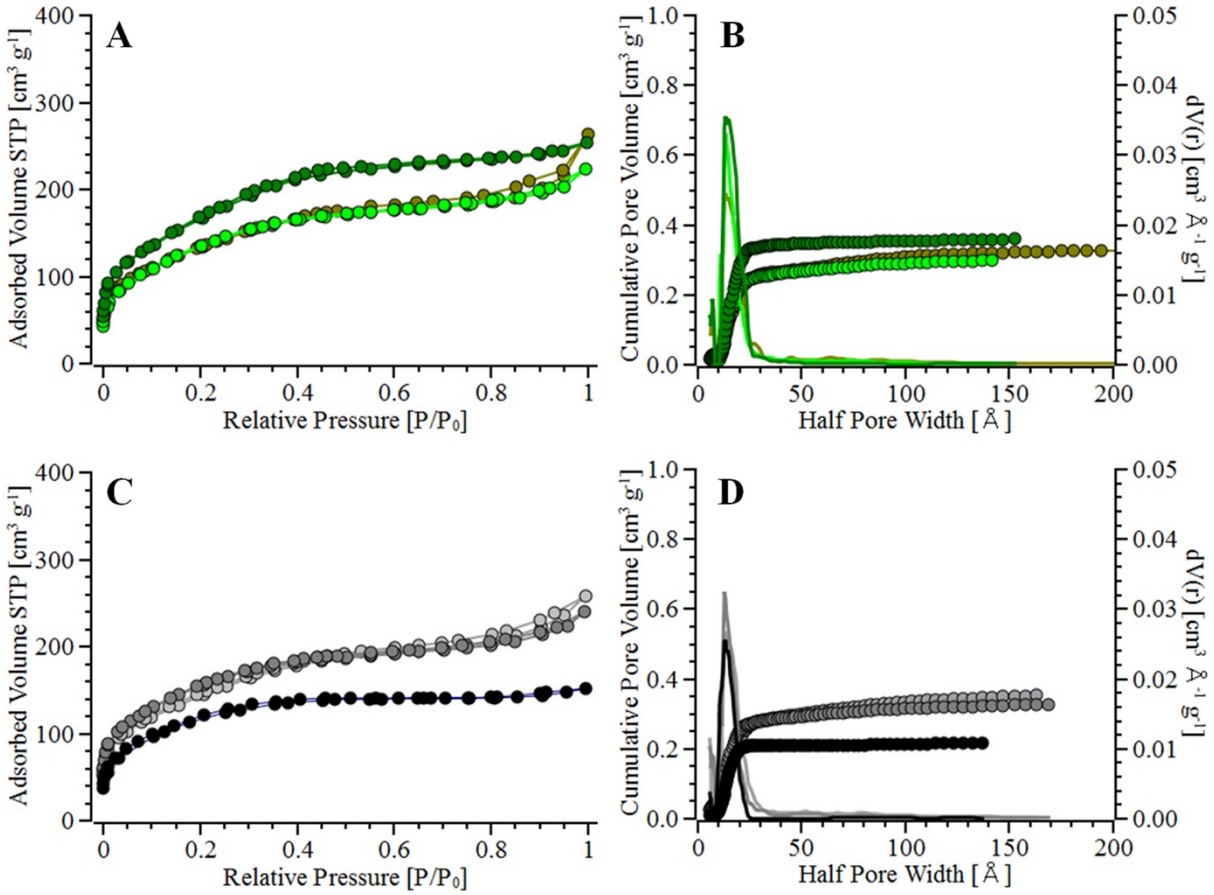


Fig. S9. Nitrogen sorption isotherms (left) and pore size distribution (right) of reference titania obtained in 2-propanol CO_2 supercritical dried (A,B) and RT ambient pressure air dried (C,D) at varying aging time: PT-0-P-Sd-7 (dark yellow), PT-0-P-Sd-10 (light green), PT-0-P-Sd-15 (dark green), PT-0-P-Ad-7 (light grey), PT-0-P-Ad-10 (dark grey), PT-0-P-Ad-15 (black).