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Fabrication of ice-templated macroporous TiO₂-chitosan scaffolds for photocatalytic applications

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Supplementary Figures

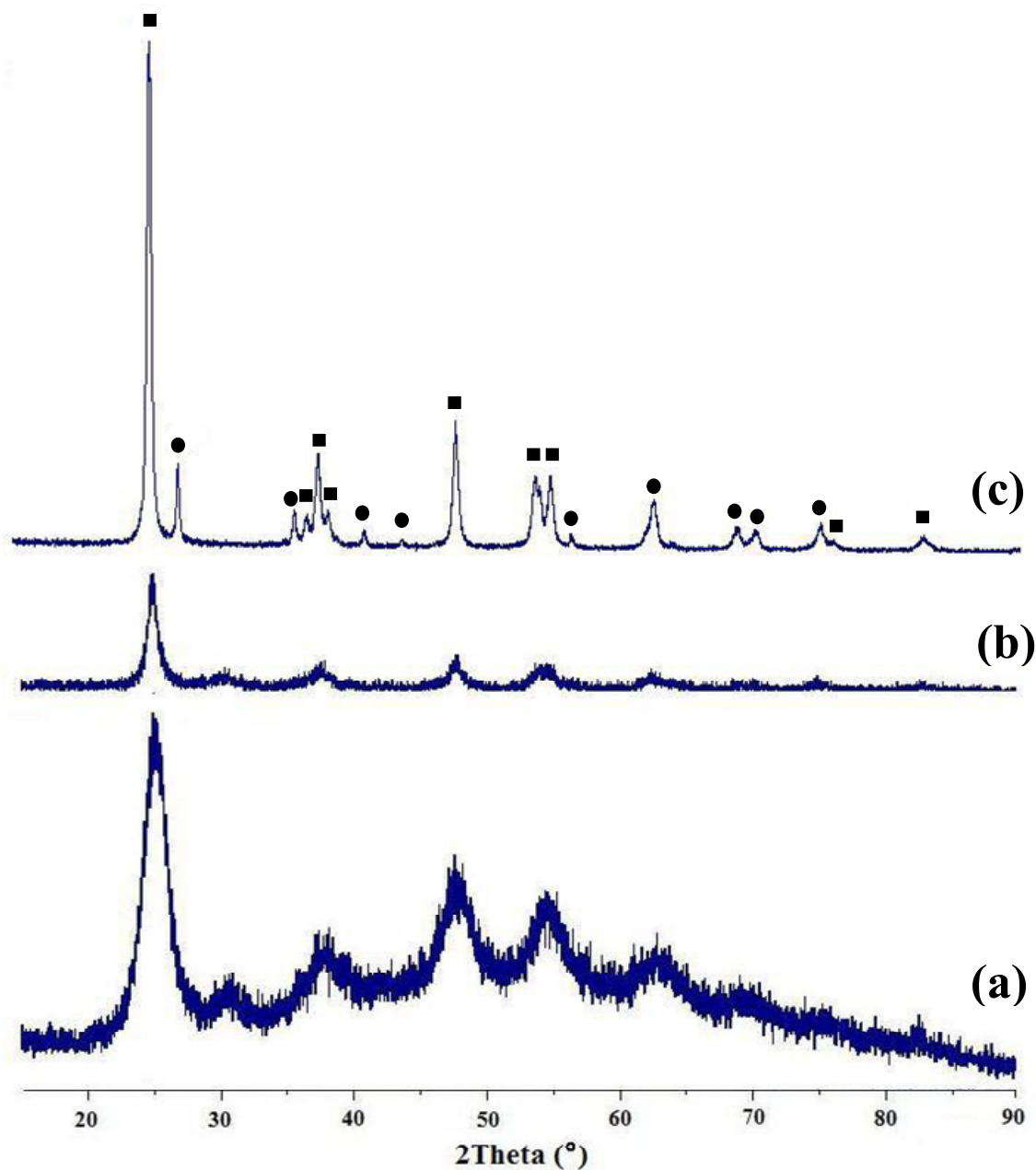


Figure S1. PXRD patterns of (a) as-synthesized titania sol, (b) K-TiO₂ powder calcined at 400 °C/3h and (c) as-received commercial P-25 titania showed mixed anatase (■) and rutile (●) phases

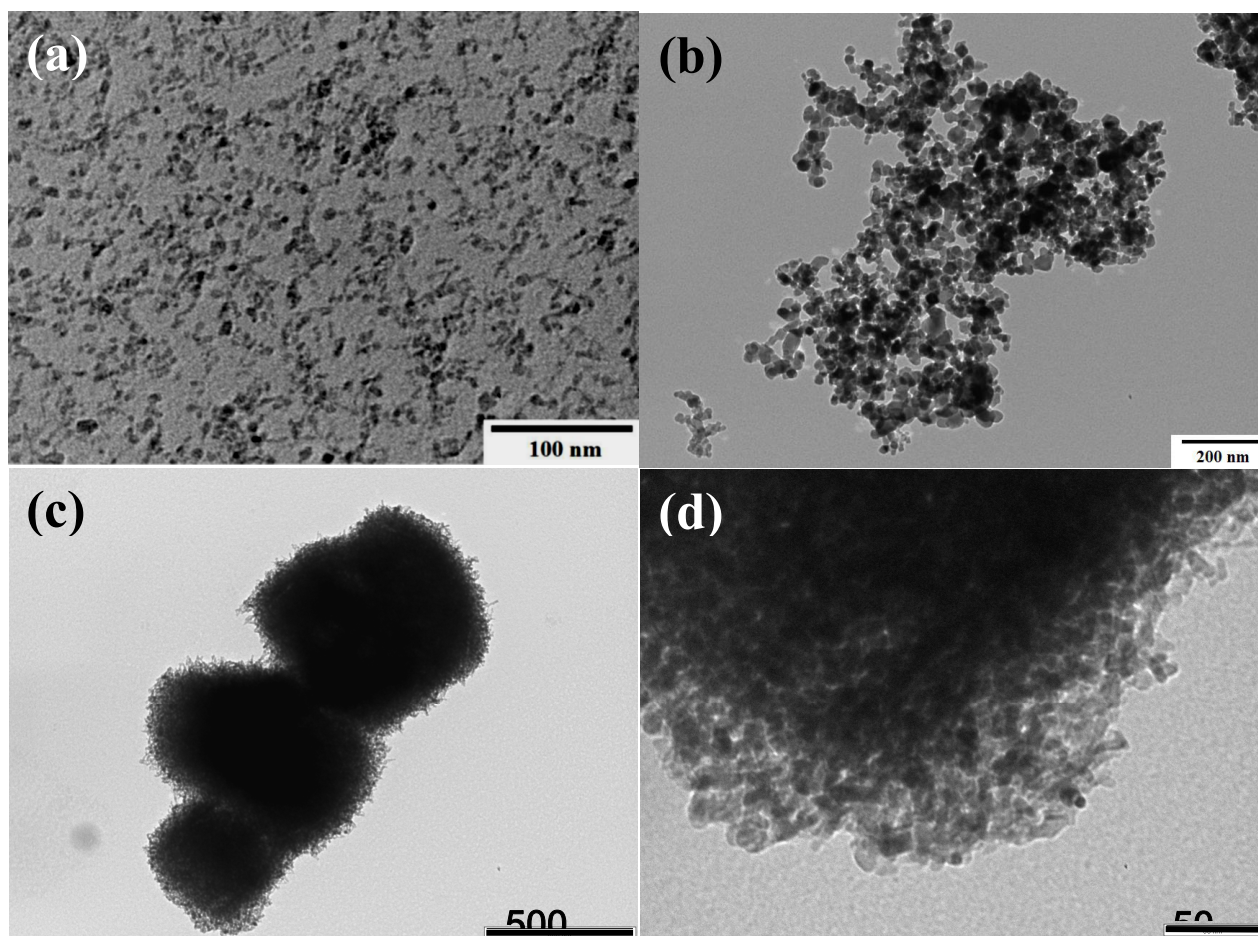


Figure S2. TEM images of (a) as-synthesized titania sol, (b) commercial P-25 (c) K-TiO₂ powder calcined at 400 °C/3h and (d) corresponding higher magnification image of (c) showing primary nanoparticles.

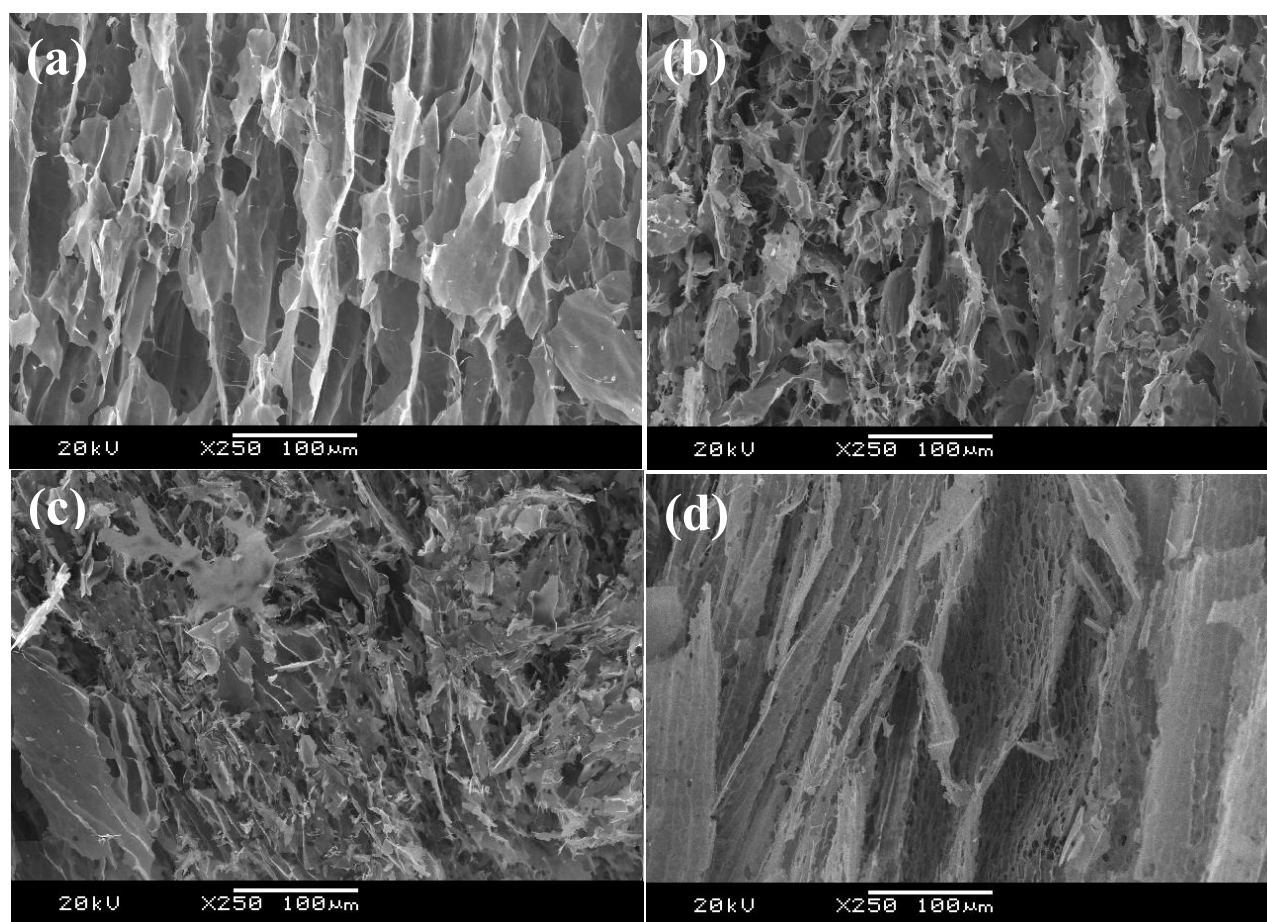


Figure S3. SEM images showing effect of TiO_2 loading on the periodicity of the internal microstructure of ice-templated scaffolds fabricated using chitosan to titania ratios (v/v) of (a) 0.5, (b) 2.0, (c) 4.0 and (d) 8.0.

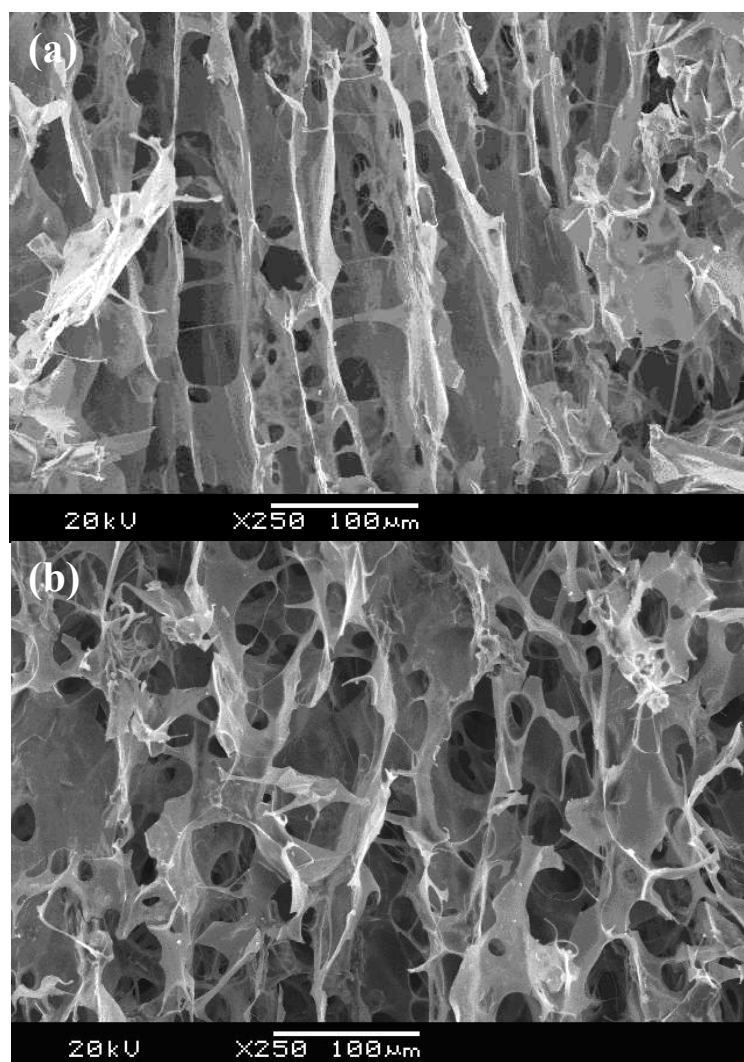


Figure S4. SEM images of longitudinal sections of chitosan-titania scaffolds prepared at immersion rates of (a) 2 mm/min and (b) 15 mm/min.

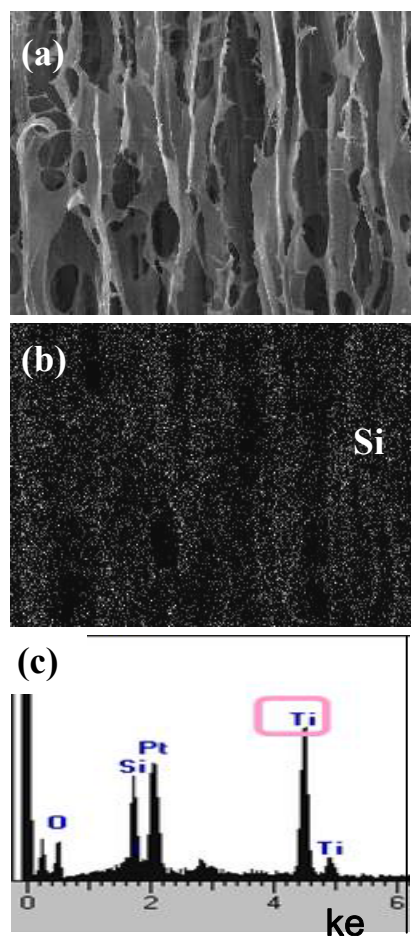


Figure S5. (a) SEM image and corresponding (b) Si elemental map and (c) EDX analysis showing presence of Ti for CS-TiO₂ scaffold viewed in longitudinal section.

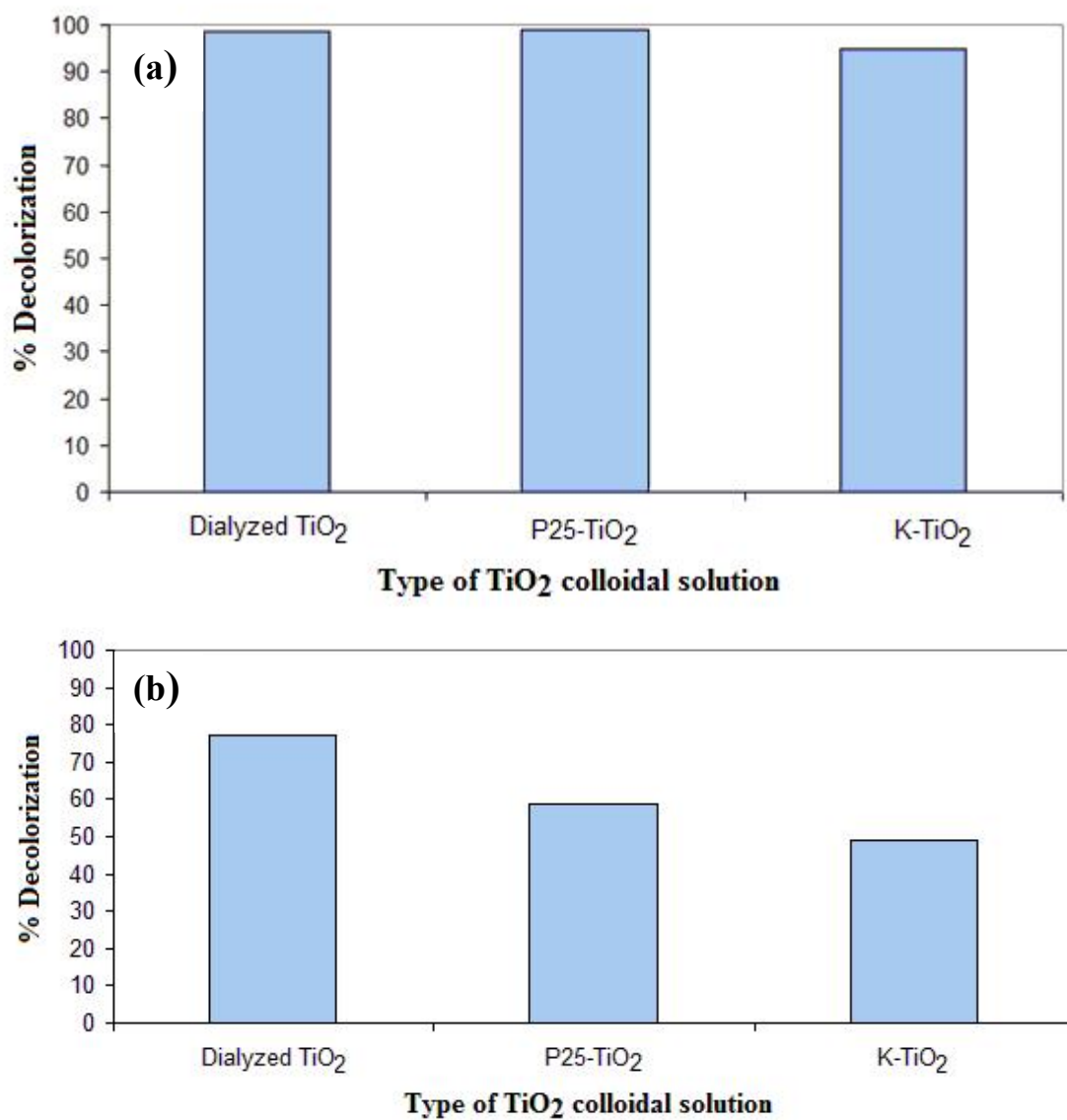


Figure S6. Plots representing photocatalytic degradation of (a) Methylene blue (b) Orange II dye using TiO_2 nanoparticles in the absence of a chitosan matrix.