



TiO₂-Based Nanostructures and Photocatalysts

Guest Editor:

Dr. Michela Alfè

Institute for Research on
Combustion (IRC-CNR), National
Research Council of Italy,
Piazzale V. Tecchio 80, 80125
Napoli, Italy

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Message from the Guest Editor

TiO₂ is one of the most studied semiconductor photoactive materials. A wide array of approaches have developed for enhancing the TiO₂ photocatalytic activity, including TiO₂ morphology tuning at a nanoscale level, improving its intrinsic charge mobility, and hindering or decreasing the electron–hole recombination via charge separation through a hetero-interface (combining TiO₂ with graphene-related materials, small molecules, or metal oxides).

This Special Issue will be focused on the recent advances in the development of TiO₂-based materials, covering both innovative synthesis, specific applications and peculiar electron transport mechanisms. Submissions framed, especially in these following areas, are welcome: 1) TiO₂ nanostructures: synthesis, doping, and modelling; 2) Hybrid TiO₂/two-dimensional materials (transition metal dichalcogenides and graphene-related materials): synthesis, characterizations, and photocatalytic applications;

3) Application of TiO₂-based materials and composites for photocatalysis, water remediation, gas sensing, fine chemical production, self-cleaning surfaces, antibacterial activity, and biomedical applications.

