

Titanium Dioxide Nanomaterials

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Titanium Dioxide Nanomaterials

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EDITORS

Xiaobo Chen

Lawrence Berkeley National Laboratory
University of California–Berkeley
Berkeley, California, U.S.A.

Michael Graetzel

Ecole Polytechnique Fédérale de Lausanne
Lausanne, Switzerland

Can Li

Chinese Academy of Sciences
Dalian Institute of Chemical Physics
Dalian, China

P. Davide Cozzoli

Università del Salento and National Nanotechnology
Laboratory-Nanoscience Institute of CNR
Lecce, Italy



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PREFACE

Titanium dioxide nanomaterials have been showing very promising applications in many fields. Scientists from all over the world have gathered together to discuss the most recent advances in areas spanning from theoretical calculations, to fundamental surface science, and materials fabrication, characterization and practical exploitation. Over 160 papers, presentations and posters, were accepted in Symposium GG, “Titanium Dioxide Nanomaterials” at the 2011 MRS Spring Meeting held April 25-29 in San Francisco, California. Among the invited presentations, Professor Annabella Selloni from Princeton University has shown the importance of the TiO₂/water interface. Professor John Yates from the University of Virginia delivered an exciting talk on the surface science of TiO₂ and the related electronic excitation and deexcitation processes. Professor Ulrike Diebold from Institute for Applied Physics, Vienna, Austria and Tulane University introduced us to the fundamental aspects of the organic molecule adsorption and reaction on TiO₂ surfaces. Professor Kazunari Domen from the University of Tokyo and Professor Hiroaki Tada from Kinki University, Japan demonstrated how to apply TiO₂-based nanomaterials for generating hydrogen from water under sunlight irradiation. Dr. Hugo Destailats from Lawrence Berkeley National Laboratory discussed the use of TiO₂ photocatalysts in indoor air cleaning applications and the related challenges and opportunities.

In this printed proceeding are some of the selected papers which cover the synthesis, properties, and applications of titanium dioxide nanomaterials.

Xiaobo Chen
Michael Graetzel
Can Li
P. Davide Cozzoli

September 2011

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