

5th International Conference on **Nanotek & Expo**

November 16-18, 2015 San Antonio, USA

Hybrid nanofibers of TiO₂-silicone and TiO₂-Ag-silicone for high water flux photocatalytic degradation of dairy effluent

Muzafar A Kanjwal

Technical University of Denmark, Denmark

Special importance is given to highlight new techniques and recent progress in enhancing photo catalytic efficiency and flux of TiO₂-based materials, which drives the design of key strategies and potential new directions of TiO₂ photo-catalysts. The TiO₂ and TiO₂-Ag nanofibers were produced by electro-spinning technique. Silicone elastomer discs (diameter: 10.0 mm; thickness: 2.0 mm) are surface coated with the TiO₂ and TiO₂-Ag nanofibers. The surface functionalization of these nanofibers on silicone elastomer surface by dip-coating method, results in the formation of (TiO₂-) and (TiO₂-Ag) silicone discs. The coated discs were characterized by various techniques like SEM, TEM, XRD, FTIR, EDS, UV, etc. These characterizations reveal that surface morphology of electrospun nanofibers has not been lost by the dip-coating technique. The produced material TiO₂- and TiO₂-Ag silicone discs, when utilized as photo-catalysts to degrade water (dairy waste in this study) exhibited good results, and very good material for high water flux and water photo-splitting.

Biography

Muzafar A Kanjwal has completed his PhD from Chonbuk National University, South Korea. Currently, he is working as Researcher at National Food Institute, Technical University of Denmark. He has published more than 40 papers in reputed journals. His research focuses on photocatalysis, and developing nano/micro structures by electro-spinning method.

muka@food.dtu.dk

Notes: