Hybrid matrices of TiO2 and TiO2–Ag nanofibers with silicone for high water flux photocatalytic degradation of dairy effluent - DTU Orbit (08/11/2017)

Hybrid matrices of TiO2 and TiO2–Ag nanofibers with silicone for high water flux photocatalytic degradation of dairy effluent

TiO2 and TiO2–Ag nanofibers were produced by electrospinning technique and surface coated on silicone elastomer (diameter: 10.0 mm; thickness: 2.0 mm) by dipcoating method. These coated hybrid nanoporous matrices were characterized by various morphological and physicochemical techniques (like SEM, TEM, XRD, FTIR, EDS and UV). These characterizations reveal that the surface morphology of electrospun nanofibers remain intact by the dipcoating technique. The produced hybrid matrices of TiO2 and TiO2–Ag silicone were utilized as photocatalysts to degrade dairy waste water with an efficient water flux and water photosplitting properties.

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