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CERTIFICATE

This is to certify that Dr. Thomas Mathew, Department of Chemistry, St. John's College, Anchal has established a linkage with Mr. Sunesh S M, Department of Chemistry, GHSS Munnurcode, Palakkad towards collaborative research leading to joint publications in national and international journals on 03 January 2020.

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Electronically Integrated Mesoporous Ag–TiO_2 Nanocomposite Thin films for Efficient Solar Hydrogen Production in Direct Sunlight

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Abstract

The synthesis of mesoporous TiO_2 by a solution-based assembly process and Ag/TiO_2 nanocomposites is provided. The efficacy of Ag/TiO_2 nanocomposite as photocatalyst in thin-film form is demonstrated for solar hydrogen generation in sunlight. Integration of Ag with TiO_2 dramatically enhanced the H_2 production: with 1 wt% Ag on TiO_2 (TiAg-1), the H_2 yield was observed to be 4.59 mmol h^{-1} g^{-1}, which is 2.3 (30) times larger than 0.5 wt% Ag on TiO_2. TiAg-1 shows 4.3 times higher activity in film form compared with its art. High photocatalytic efficiency is attributed to the surface plasmon