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Abstract

Photocatalytic reduction of CO_2 gas over TiO_2 thin films

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conversion of CO2 to value-added fuels or chemical products by direct use of sunlight is an appealing but a defying process. CO2 is a rather inert compound and its conversion to other carbon compounds is commonly thermodynamically unfavorable. It is infamous that the efficiencies of photocatalytic reduction of CO2 reported so far are very low. This exterimely overworkproblem in product identification and quantification.In our work, TiO2 thin-films were prepared by sol-gel method and characterized by different physicochemical investigations as X-Ray diffraction (XRD), high resolution transmission electron microscopy (TEM), N2 adsorption- desorption isotherm and FT-IR. The prepared thin films were used in photo-reduction of CO2 in presence of water vapor at 80□C using gas flow reactor. TiO2 showed high efficiency using UV light.

Biography:

Ahmed Abdel Wahab Salem is an Assist Prof Dr. in EPRI (Egyptian petroleum Research Institute) in Cairo. A member of the central laboratories in EPRI. The Safty head manager of the EPRI.

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