

Effect of operating variables on the preparation of NaTaO₃ by spray pyrolysis and its performance for H₂ evolution from water in a slurry reactor

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NaTaO₃ photocatalyst was prepared by spray pyrolysis process for water splitting under UV light. Precursor solution was prepared from NaNO₃ and Ta(OC₂H₅)₅ as precursors in nitric acid solution. Precursor preparation temperature, precursor concentration, Na/Ta ratio and doping concentration of La were controlled to screen photocatalysts with enhanced activity. In spray pyrolysis process, reaction temperature and residence time were controlled to find out optimum operating conditions for photocatalyst with high photocatalytic activity. Characteristics of NaTaO₃ powder and its photocatalytic activity were also examined.