466a Optimum Photolysis in Taylor-Couette Flow

Zhengcai Ye and Larry Forney

Photolysis was studied in Taylor-Couette flow for the formation of a product from a fast photochemical reaction in the presence of laminar Taylor-Couette vortices. The concentration of the product formed depended on both the dosage of photons and a reaction layer thickness where the latter is defined as the radiation penetration depth. In particular, for a given flow rate and radiation intensity, the UV photolysis of iodide produced a maximum concentration of the product triiodide when the radiation penetration depth was equal to the velocity boundary layer thickness.