

Design and test of micro catalytic combustors for use in microthrusters

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Abstract

Micro catalytic combustors for use in microthrusters are studied experimentally. Microchannels, coated with Pt catalytic walls and columns were fabricated to investigate microscale catalytic reaction. This microscale reaction enhancement by Pt catalytic surface area is characterized by increasing outlet gas temperature with the increase of surface-to-volume ratio. It is found that the reaction efficiency improvement by Pt catalytic columns will extend the operation conditions especially for smaller microchannel size.

Keyword : micro catalytic combustor; microthruster