

Preparation of Pd Nano Catalyst by E-beam Evaporation on Microchannels

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Microreaction technology offers many fundamental and practical advantages of relevance to the fine chemical, pharmaceutical intermediates and energy. Using the catalyst in packed bed for microreaction technology is not convenient due to high pressure drop, poor heat transfer and channeling of gases. A wall-coated catalyst represents a superior geometry since it provides lower pressure drop and ease of manufacturing. The objective of this work is to control the size and distribution of the Pd catalyst that was formed by the thermal treatment of Pd thin films on the microchannels, deposited using E-beam evaporation. The particle size and distribution was dependant on thermal treatment time. The Pd catalyst particle having diameters of 20-50 nm showed a best performance of combustion of LPG.