

Interface of nanocatalysis and microfluidic reactors for green chemistry methods

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Abstract

The development of green catalytic methods for chemical synthesis and energy generation based on nanocoated catalyst microfluidic systems is a growing area of innovative research. The interface between heterogeneous catalysis and microchannel reactors has demonstrated superior process performance over conventional technologies for green chemical synthesis and energy generation. In this instance, energy generation technologies are focused on catalytic reforming for H₂ production and fuel cells for energy supply. This chapter highlights and analyzes the key achievements to date on integrated catalysis and microfluidics concepts in chemical synthesis and energy generation. Emphasis is focused on highlighting the enhanced potential of integrated nanocoated catalyst microfluidics as an effective technology to meet the demands of green and sustainable chemistry methods