CATALYTIC ENGINEERED MATERIALS FOR COMMERCIAL AND INDUSTRIAL ENERGY APPLICATIONS

This special issue of the Journal of Materials Research contains articles that were accepted in response to an invitation for manuscripts.

Introduction

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One major worldwide energy challenge is the reduction of environmental pollution caused by the combustion of fossil fuels and other chemical energetic components. For more than one hundred years, extensive research has sought cleaner fuels to supply energy consumption demands with mainstays of upgrading bitumen and coal and hydro-processing fuels. A primary challenge for refinery processing is using the efficiency and long-life span of catalytic materials to lower the high content of heterogeneous atoms such as sulfur and other pollutants, as well as to improve methane reforming and water split. This *Journal of Materials Research* Focus Issue presents research on catalytic materials including chemical synthesis, evaluation, characterization, and computer-assisted electronic structure simulation. Contributions to the issue come from research groups in Brazil, México, China, and other countries. This Focus Issue includes data and information related to diverse materials for catalytic purposes with special emphasis on recent achievements in the field which will be of great relevance to the academic and industrial communities. The editors thank all contributors for their submissions to the issue.

ON THE COVER

Scanning Electron Microscopy image captured by Manuel Ramos in a Hitachi model S5500 at 30kV. It corresponds to MoS2 synthesized by Brenda Torres at room temperature using salt solutions. It is possible to observe a hexagonal shape of MoS2 large crystallites. Authors thank: University of Texas at El Paso and Kleberg Adv. Microscopy Center of University of Texas at San Antonio for usage of laboratory facilities. Project was funded by Universidad Autónoma de Ciudad Juárez-IIT Campus.

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