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# APCAT-6

The 6th Asia-Pacific Congress on Catalysis

# The 6th Asia-Pacific Congress on Catalysis

New Era of  
Catalysis: Efficiency,  
Value, and  
Sustainability

TAIPEI  
TAIWAN

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**Organizers:**

Catalysis Society of Taiwan  
National Taiwan University

**Co-Organizers:**

Academia Sinica  
Industrial Technology  
Research Institute  
CPC Corporation, Taiwan

# ABSTRACT BOOK



Wed-P2-148

### Effect of Diffusion and Particle Size on Hydrodesulfurization of DBT over Novel Micro-Mesoporous Composite-Supported NiMo Catalysts under Reactive Conditions

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A novel composite micro-mesoporous material Beta-KIT-6 (denoted as BK) was successfully synthesized by two-step hydrothermal method. The synthesized materials and corresponding supported NiMo catalysts were characterized by means of N<sub>2</sub> adsorption-desorption, XRD, IR, TEM, SEM and <sup>27</sup>Al MAS NMR. Effect of diffusion and particle size of novel micro-mesoporous composite supported catalysts under DBT hydrodesulfurization reactive conditions were firstly studied. The HDS conversion increased as the catalyst particle size decreased, the HDS reaction over 60–80 mesh crushed catalysts can be regarded as intrinsic reaction.

Wed-P2-149

### Use of Neuronets for the Analysis of Transitional Metals Distribution in a Technological Waste for Use Them in Synthesis of Catalysts

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Wastes of Aksu ferroalloy plant contain a lot of metals useful as oil refining and petrochemistry catalysts (for example Cr – 1.73 %, Mn – 2.18 %, Fe – 1.01 %). The distribution of valuable elements on territory of dump was mapped using neural net. High degree of convergence allow to use developed neural net for estimation of possibility of industrial wastes using as secondary deposit of valuable elements including transition metals.

Wed-P2-150

### Complete Oxidation of Benzene over CuO-CeO<sub>2</sub> Catalysts Prepared by Co-Precipitation Method

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In this paper, we have prepared CuO-CeO<sub>2</sub> mixed oxides by different method. The CuO-CeO<sub>2</sub> catalysts were characterized using X-ray diffraction(XRD), X-ray photoelectron spectroscopy(XPS) and temperature-programmed reduction(TPR) in order to determine the nature of the metal species. In addition, their catalytic activity on benzene combustion in the presence of oxygen was also examined. Reaction tests were carried out in a continuous flow fixed-bed reactor. For the CuO/CeO<sub>2</sub> catalyst prepared by co-precipitation method, it shows the best redox property and the highest activity for the catalytic oxidation of benzene. This is likely owing to highly dispersed CuO on CeO<sub>2</sub>.

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