

*Regional Annual Fundamental Science Seminar 2008 (RAFSS 2008)*

*27 – 29 May 2008*

*Ibnu Sina Institute for Fundamental Science Studies  
Universiti Teknologi Malaysia*

## **DYNAMIC MODIFICATION OF H<sup>+</sup> ACTIVE SITE ON HZSM-5 CATALYST**

Malik Musthofa<sup>1</sup>, Nurul Aini Mohamed Razali<sup>2</sup>, Nur Hayati Hanis Hairom<sup>2</sup>, Aishah Abdul Jalil<sup>2</sup>,  
Sugeng Triwahyono\*<sup>1</sup>

<sup>1</sup> Ibnu Sina Institute for Fundamental Science Studies, <sup>2</sup>Faculty of Chemical and Natural Resources Engineering, Universiti Teknologi Malaysia, 81310 UTM Skudai, Johor, Malaysia.

email:sugeng@ibnusina.utm.my

Dynamic modification of H<sup>+</sup> active sites from molecular hydrogen on Zn loaded HZSM-5 was studied by IR spectroscopy of adsorbed pyridine. By heating in the presence of molecular hydrogen, H<sup>+</sup> active sites were formed with a concomitant decline of Lewis acid sites. The Lewis acid sites began to convert into H<sup>+</sup> active sites at 348 K and the number of H<sup>+</sup> active sites increased by increasing the heating temperature. The activity of HZSM-5 catalyst was tested on the hydroisomerization of pentane.

*Regional Annual Fundamental Science Seminar 2008 (RAFSS 2008)*  
*27 – 29 May 2008*  
*Ibnu Sina Institute for Fundamental Science Studies*  
*Universiti Teknologi Malaysia*

*Regional Annual Fundamental Science Seminar 2008 (RAFSS 2008)*  
*27 – 29 May 2008, Ibnu Sina Institute for Fundamental Science Studies*  
*Universiti Teknologi Malaysia*