

## **CARBON MOLECULAR SIEVES FROM CARBON DEPOSITION OVER PALM SHELL BASED ACTIVATED CARBON**

M.A. Ahmad<sup>ab</sup>, W.M.A.W. Daud<sup>a</sup> and M.K. Aroua<sup>b</sup>

<sup>a</sup>*Department of Chemical Engineering, University of Malaya, 50603 Kuala Lumpur, Malaysia*

<sup>b</sup>*School of Chemical Engineering, Universiti Sains Malaysia, Seri Ampangan, 14300 Nibong Tebal, Penang, Malaysia*

### **ABSTRACT**

Adsorption on carbon molecular sieves (CMS) prepared by carbon deposition (CD) has become an interesting area of adsorption due to its microporous nature and favorable separation factor on size and shape selectivity basis for many gaseous systems. Gas separation in PSA systems is their main industrial application. In the present work, the preparation of CMS by carbon deposition on palm shell based activated carbon has been studied. The activation temperature of 830°C using steam for 60 minutes produced the highest micropore volume of the order 0.407 cm<sup>3</sup>/g, which is used as precursor for CMS production. The best CMS for feed benzene entrance of 1.87 x 10<sup>-5</sup> g/ml N<sub>2</sub> was produced at cracking time of 30 min. All the products were characterized by analysis of adsorption isotherm, BET surface area, micropore volume, and equilibrium isotherms.

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