programme and abstract

INTERNATIONAL CONFERENCE ON NANOTECHNOLOGY

ICONT-2009
LANGKAWI , MALAYSIA

14th -17th December 2009

Bayview Hotel
Langkawi Island, Malaysia

RESEARCH AND COMMERCIALISATION

[ICONT 2009]

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DAY 2: 16 DECEMBER 2009(WEDNESDAY)
ORAL PRESENTATION
PARALLEL SESSION B(9.20AM – 5.35PM)

NANODEVICES - MEMS, NEMS, SENSOR, PHOTONICS AND ELECTRONICS VENUE: BALL ROOM		
TIME	**CODE**	**TITLE / PRESENTER / ORGANISATION**
9:20-9:50 AM	ORAL 6D-O-5	**Synthesis and Characterization of Cobalt Bimetallic Nanocatalysts on Alumina** **Mr Sardar Ali** UNIVERISITI TEKNOLOGI PETRONAS
9:50-10:10 AM	ORAL 6D-O-6	**Cds and Zns Nano-Particles: Synthesis, Structural and Optical Characterization** **Prof. N.S. Saxena** UNIVERSITY OF RAJASTHAN
10:30-10:50 AM	ORAL 6D-O-7	**Preparation of Monodisperesed Cobalt Ferrite Nanoparticle using Hydrothermal Approach.** **Mr Goh Seng Chau** UNIVERSITI KEBANGSAAN MALAYSIA

SYNTHESIS, CATALYST & CHEMICAL VENUE: BALL ROOM		
10:50-11:10 AM	ORAL 6B-O-8	**Preparation and Properties of Polyacrylamide Nanocomposite Hydrogels for Enhanced Oil Recovery Applications** **Dr Jamal Aalaie** RESEARCH INSTITUTE OF PETROLEUM INDUSTRY
11:10-11:30 AM	ORAL 6B-O-9	**Synthesis, Characterization and Separation Performance of ZSM-5 Zeolite Membranes** **Prof. Ali Ahmadpour** FERDOWSI UNIVERSITY OF MASHHAD
11:30-11:50 AM	ORAL 6B-O-10	**Effect of Preparation Method on the Physicochemical Properties of MoVNbTe Catalyst for Propane Ammoxidation to Acrylonitrile** **Dr Anita Ramli** UNIVERSITI TEKNOLOGI PETRONAS
11:50-12:10 PM	ORAL 6B-O-11	**Surface Modification of Mixed Self-Assembled Monolayer by Cu(I)-Catalyzed Cycloaddition and Ester Hydrolysis** **Dr Hairul Anuar Bin Tajuddin** UNIVERSITY OF MALAYA
12:10-12:30 PM	ORAL 6B-O-12	**SBA-15 Functionalized with Organosulfonic Acid by Post Synthesis-Grafting for Catalytic Esterification of Glycerol Towards Monoglyceride Production** **Ms Lilis Hermida** UNIVERSITI SAINS MALAYSIA

NS-6A-4: Characterization of TiO_2 Nanopowders from Solvothermal Method

Masliana M., Meor Yusoff M.S. and Wilfred S. P.

Group 6B: SYNTHESIS, CATALYST & CHEMICAL

6B-O-8: Preparation and Properties of Polyacrylamide Nanocomposite Hydrogels for Enhanced Oil Recovery Applications

Jamal Aalaie, Ali Rahmatpour, and Marjan Yousefi

6B-O-9: Synthesis, Characterization and Separation Performance of ZSM-5 Zeolite Membranes

Banihashemi S. F., Ahmadpour A., Pakizeh M., and Pourafshari Chenar M.

6B-O-10: Effect of Preparation Method on the Physicochemical Properties of MoVNbTe Catalyst for Propane Ammoxidation to Acrylonitrile

Anita Ramli

6B-O-11: Surface Modification of Mixed Self-Assembled Monolayer by Cu (I)-Catalyzed Cycloaddition and Ester Hydrolysis

Hairul A. Tajuddin,* and Nicholas H. Williams‡

6B-O-12: SBA-15 Functionalized with Organosulfonic Acid by Post Synthesis-Grafting for Catalytic Esterification of Glycerol Towards Monoglyceride Production

Lilis Hermida, Ahmad Zuhairi Abdullah*, and Abdul Rahman Mohamed.

P6B-S2-1: Preparation and Characterization of Zeolite Beta Supported Monometallic and Bimetallic Catalysts for Catalytic Gasification of Biomass

Siti Eda Eliana Misi and Anita Ramli

P6B-S2-3: The Effect of Mo Loading on Alpha- Mo-MODIFIED HZSM-5 for Methane Aromatization Reactions

Chandra Mohan Sinnathambi

P6B-S2-4: PHYSICOCHEMICAL PROPERTIES OF Catalysts for Removal of Tar from Biomass Gasification

Suzaimi Johari[1], and Anita Ramli[1]*

P6B-S2-5: Synthesis and Characterization of Nano Silicoaluminophosphate (SAPO-34) Molecular Sieve for Gas Separation Membranes

Biruh Shimekit[1]*, Hilmi Mukhtar[1] and Saikat Maitra[1]

P6B-S2-2X: Designing Supported Bimetallic Pt/Ni Particles for the Application of Hydrogenation Reactions

N. H. H. Abu Bakar[1], M. M. Bettahara*, M. Abu Bakar[2], S. Monteverdi[1] and J. Ismail[2]

6B-O-9

Synthesis, Characterization and Separation Performance of ZSM-5 Zeolite Membranes

Banihashemi S. F., Ahmadpour A., Pakizeh M., Pourafshari chenar M.*

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Abstract

This paper reports the hydrothermal synthesis of ZSM^{-5} type zeolite membranes on porous α-alumina supports by the secondary growth method. Porous α-alumina supports were seeded in the nano $silicalite^{-1}$ suspension. The seed layers were grown into ZSM^{-5} film in a synthesis solution. The zeolite membranes were prepared with different aluminum contents. The effect of aluminum contents on the formation of ZSM^{-5} crystalline layer was investigated by SEM observation of the status of crystal intergrowth on the surface. The zeolite membranes were characterized by XRD, TGA, SEM, TEM and single gas permeation. The XRD pattern showed peaks corresponding to the specific peaks of ZSM^{-5} zeolite. The morphology of synthesized $silicalite^{-1}$ zeolite powder was investigated using TEM. The zeolite film thickness and the surface of synthesized ZSM^{-5} membranes were indicated by SEM images. The thermogravimetric analysis was performed in order to investigate the removing of organic template. The zeolite MFI membranes were also examined by permeation measurements using single gases of CO_2, CH_4 and N_2. The permeance decreased in all experiments in the order of CO_2 ,N_2 and CH_4.

Keywords: ZSM^{-5}, Zeolite membrane, Nano $silicalite^{-1}$, Characterization, Gas permeation.