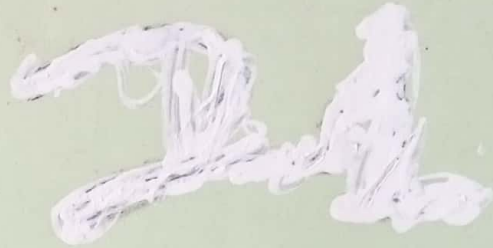


**BOOK OF
ABSTRACTS**



UTM
UNIVERSITI TEKNOLOGI MALAYSIA

Institute of
Hydrogen Economy



**2nd Conference on
Emerging Energy &
Process Technology 2013
(CONCEPT 2013)**

9 & 10 December 2013

Desaru, Johor

UNIVERSITI TEKNOLOGI MALAYSIA

DAY 1		
9 th December 2013 (Monday)		
Session 1B		
Time	No.	Title
2.30 – 2.35 pm	1B-1	Mohamed Mahmoud Nasef, Rihab Moawia A.Musaad, Jamaliah Sharif Pre-irradiation induced emulsion – graft polymerization of GMA onto flax fibers
2.35 – 2.40 pm	1B-2	Karim, A. H., Jalil, A. A., Triwahyono, S., Kamarudin, N. H. N. Adsorption behavior of carbon nanotubes modified mesostructured silica nanoparticles for the removal of methylene blue
2.40 – 2.45 pm	1B-3	Hamdani Saidi, Habibu Uthman Effect of mineral acids addition on the radiation-induced grafting of 1-vinylimidazole onto preirradiated poly (ethylene-alt-tetrafluoroethylene) films
2.45 – 2.50 pm	1B-4	Teh, L. P., Triwahyono, S., Jalil, A. A., Mukti, R. R. Effect of Iridium Loading on MoO ₃ -HZSM ₅ for Isomerization of n-Heptane
2.50 – 2.55 pm	1B-5	Farahhin, N. J., Kamarudin K. S. N. Structural Properties of Modified Kenaf Fiber using Metal Hydride
2.55 – 3.00 pm	1B-6	M.R. Sazegar, S. Triwahyono, A.A. Jalil, R.R. Mukti, M. Aziz Increase the Activity of Mesoporous Silica Nanoparticles (MSN) by Aluminum grafting for Cumene Cracking under Hydrogen Atmosphere
3.00 – 3.05 pm	1B-7	Wan Nurshahida Wan Jusoh, Nor Azillah Fatimah Othman, Tuan Amran Tuan Abdullah Radiation Shielding of Spent Bleaching Earth Toward Gamma Ray
3.05 – 3.10 pm	1B-8	Jaafar, N. F. , Jalil, A. A., Triwahyono, S. , Jusoh, R. , Jusoh, N.W.C. Mesoporous TiO ₂ Enhanced Photocatalytic Degradation of 2-Chlorophenol
3.30 – 4.30 pm		Poster presentation for Session 1B

* Each presenter will be given 5 minutes oral presentation and one hour Q&A during poster presentation

DAY 2		
10 th December 2013 (Tuesday)		
Session 2A		
Time	No.	Title
8.30 – 8.35 am	2A-1	Fariha, L. M. R., Mimi, H.H, Mutahharah, M. M., Mohd, R.M.T. Health Risk Assessment due to Emissions from Medical Waste Incinerator in Malaysia
8.35 – 8.40 am	2A-2	Mohamed A. Khalil , Arshad Ahmad and Ali Al-shanini Fault Detection and Diagnosis for Heat exchanger Pilot Plant System Using Multilevel Flow Modeling
8.40 – 8.45 am	2A-3	Kamarizan Kidam, Hamidah Kamarden, Markku, H., Haslenda, H. Interconnection of Contributors to Accident in Chemical Process Industry
8.45 – 8.50 am	2A-4	Ali Al-Shanini , Arshad Ahmad , Mohamed A. Khalil Modeling the Impact of Natural and Security Hazards in an LNG Processing Facility
8.50 – 8.55 am	2A-5	Hussin, N.E., Kidam, K., Johari, A., Hashim, H., Hurme, M. Risk Reduction Strategies in the Chemical Process Industry
8.55 – 9.00 am	2A-6	Nur H. Hanafi, Mimi H. Hassim, Siti H. M. Setapar, and Mohd R. M. Yusuf Comparison of Emission Factors From Biomass Burning Facilities
9.00 – 9.05 am	2A-7	Mimi H. Hassim, Yousef A. Alhamdani, Markku Hurme Fugitive emission estimation of hydrogen production by natural gas steam reforming
9.05 – 9.10 am	2A-8	Sulaiman, S. Z., Kasmani, R.M., Mustafa, A. Investigation on Premixed Hydrogen/Air Explosion in 90 degree Closed Pipeline
9.10 – 9.15 am	2A-9	Jihan A. Jalani, K. Kidam. A Study of Chemical Accident Database on Hierarchy of Control in Loss Prevention
9.15 – 9.20 am	2A-10	Hamidah Kamarden, Kamarizan Kidam, Haslenda Hashim Current Issues and Challenges of Loss Prevention in Palm Oil Processing and Refinery Industry
9.30 – 10.30 am		Poster presentation for Session 2A

* Each presenter will be given 5 minutes oral presentation and one hour Q&A during poster presentation

DAY 2		
10 th December 2013 (Tuesday)		
Session 2B		
Time	No.	Title
8.30 – 8.35 am	2B-1	Fatah, N. A.A., Jalil, A. A., Triwahyono, S., Annuar, N.H. R. Cumene cracking over platinum and molybdenum oxide loaded on mesostructured silica nanoparticles
8.35 – 8.40 am	2B-2	Mohamed Mahmoud Nasef, Ali Abbasi, T.M. Ting, Khairul Suzana Kamarudin New CO ₂ adsorbent with aminated poly(glycidyl methacrylate) radio-chemically grafted onto polyethylene nonwoven sheets
8.40 – 8.45 am	2B-3	N. F. M. Salleh, A. A. Jalil, S. Triwahyono, N. H. N. Kamarudin and N. W. C. Jusoh Functionalization of APTES onto Mesostructured Silica Nanoparticles (APTES-MSN) for Enhanced Adsorption of Phenol
8.45 – 8.50 am	2B-4	Nasef, M.M. , Paveswari, S. Effect of reaction conditions on radiation induced graft copolymerization of 4-vinylpyridine onto poly (ethylene-co-tetrafluoroethylene) (ETFE) films: Kinetics study
8.50 – 8.55 am	2B-5	Sidik, S. M., Jalil, A. A., Triwahyono, S., Aziz, M. A. A. Utilization of Greenhouse Gases in Dry Reforming of Methane over Ni/MCM-41 Catalyst
8.55 – 9.00 am	2B-6	Aziz, M.A.A., Jalil, A.A., Triwahyono, S., Taufiq-Yap, Y.H., Sidik, S.M. Bifunctional Ni-promoted mesostructured silica nanoparticles for the hydrogenation of CO ₂ to methane
9.00 – 9.05 am	2B-7	Najib, S.B.M., Suahadah, S. N., Kamarudin, K.S.N Carbon Dioxide Removal in Emulsion Liquid Membrane Containing 2-amino-2-methyl-1-propanol/Monoethanolamine Mixture
9.05 – 9.10 am	2B-8	M. S. Khayoon, A. Abbas , B. H. Hameed , S. Triwahyono , A. A. jalil , A. T. Harris , A. I. Minett Selective acetalization of glycerol with acetone over Nickel nanoparticles supported on multi-walled carbon nanotubes
9.30 – 10.30 am		Poster presentation for Session 2B

* Each presenter will be given 5 minutes oral presentation and one hour Q&A during poster presentation

DAY 2		
10 th December 2013 (Tuesday)		
Session 3A		
Time	No.	Title
11.00 - 11.05 am	3A-1	Tabari, A, Ahmad, A. Design and optimization of semicontinuous heterogeneous azeotropic distillation (SHAD) process
11.05 - 11.10 am	3A-2	Bello, A. A., Ahmad, A., Ripin, A., Oladokun, O. A. Estimation of Energy Losses from a Laboratory Spray Drier: A Computational approach
11.10 - 11.15 am	3A-3	Ali, H. Al-Shatri, Arshad, Ahmad. Multi-component Distillation Column Simulation of Aromatic Compounds
11.15 - 11.20 am	3A-4	Kuang, S. K., Ahmad, A. Modeling of Ultrasonic Assisted Reboiler System
11.20 - 11.25 am	3A-5	Taha Mahdi, Arshad Ahmad, Adnan Ripin, Mohamed M. Nasef Ultrasonic Enhancement of Separation Azeotropic Mixtures via Single Distillation Column
11.25 - 11.30 am	3A-6	Oladokun, O. A., Ahmad, A., Abdullah, T. A. T., Nyakuma, B. B, Ahmed, S. I., Bello, A. A Visual Tool for Estimating Biomass Gasification Product Using Thermodynamic and Stoichiometric Equilibrium Model
11.30 - 11.35 am	3A-7	Kamarizan Kidam, Hamidah Kamarden, Haslenda Hashim , Muhammad Abbas, A.Z. Pond-Free Wastewater Treatment of Palm Oil Mill Effluent (POME)
12.00 - 01.00 pm		Poster presentation for Session 3A

* Each presenter will be given 5 minutes oral presentation and one hour Q&A during poster presentation

DAY 2		
10 th December 2013 (Tuesday)		
Session 3B		
Time	No.	Title
11.00 – 11.05 am	3B-1	Annur, N.H.R., Jalil, A.A., Triwahyono, S., Fatah, N.A.A. The acidic center of CrO ₃ -ZrO ₂ in cumene hydrocracking activity
11.05 – 11.10 am	3B-2	Nor Azillah Fatimah O.,Jamaliah S., Tuan Amran Tuan Abdullah Preparation of Radiation Induced Graft Copolymerization of Glycidyl Methacrylate Unto Kenaf Fiber Using Full Factorial Experimental Design
11.10 – 11.15 am	3B-3	Salamun, N., Jalil, A.A., Triwahyono, S. Banana Stem Fiber as a Potentially Low Cost Adsorbent for Removal of Mercury(II)
11.15 – 11.20 am	3B-4	Mohamed Mahmoud Nasef, Madana Leela Nallappan Effect of voltage, distance and solution concentration on the electrospinning of PVDF nanofibres as precursor for boron adsorption
11.20 – 11.25 am	3B-5	Jusoh, N.W.C, Jalil, A.A, Triwahyono, S, Jusoh, Rand Jaafar, N. F Preparation of Mesostructured Silica Nanoparticles Loaded with ZnO and their Photocatalytic Activity
11.25 – 11.30 am	3B-6	Wong Syie Luing, Norzita Ngadi, Tuan Amran Tuan Abdullah Solubilisation of Low Density Polyethylene (LDPE) in Different Solvents
11.30 – 11.35 am	3B-7	Jusoh, R., Jalil, A.A., Triwahyono, S., Jaafar, N.F., Jusoh, N.W.C. Synthesis of α -FeOOH nanoparticles in ionic liquid for enhanced 2-chlorophenol degradation: Insight into photokinetic analysis
11.35 – 11.40 am	3B-8	Nabilah, Z., Khairul Sozana Nor, K. Kenaf (<i>Hibiscus Cannabinus</i> L.) Performance for CO ₂ Adsorption
11.40 – 11.45 am	3B-9	Kamarudin, N. H. N., Jalil, A. A., Triwahyono, S., Karim, A.H. , Salleh, N. F. M. Utilization of microwave for the synthesis of mesoporous silica nanoparticles as ibuprofen drug delivery vehicles
12.00 – 01.00 pm		Poster presentation for Session 3B

* Each presenter will be given 5 minutes oral presentation and one hour Q&A during poster presentation

ABSTRACT

Effect of mineral acids addition on the radiation-induced grafting of 1-vinylimidazole onto preirradiated poly (ethylene-*alt*-tetrafluoroethylene) films

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Radiation-induced grafting of 1-vinylimidazole (1-VIm) onto electron beam preirradiated poly (ethylene-*alt*-tetrafluoroethylene) (ETFE) films was investigated. Effects of mineral acids (H_2SO_4 and HNO_3) addition on the degree of grafting [DG(%)] were carefully studied. In comparison with grafting of 1-VIm onto ETFE with deionized water as a solvent in the absence of mineral acids; it was observed that addition of H_2SO_4 enhanced DG(%) tremendously. It was also found that addition of 0.2M H_2SO_4 allows high DG(%) values of up to ca. 88%. To provide evidences of grafting, Fourier-transformed infrared spectroscopy (FTIR) analysis was performed on the grafted ETFE films in comparison with the original ETFE films.

Keywords Radiation-induced grafting, 1-vinylimidazole, ETFE films, Electron beam, Degree of grafting, Mineral acids