

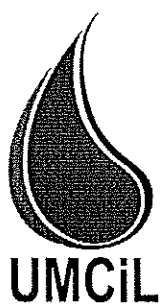
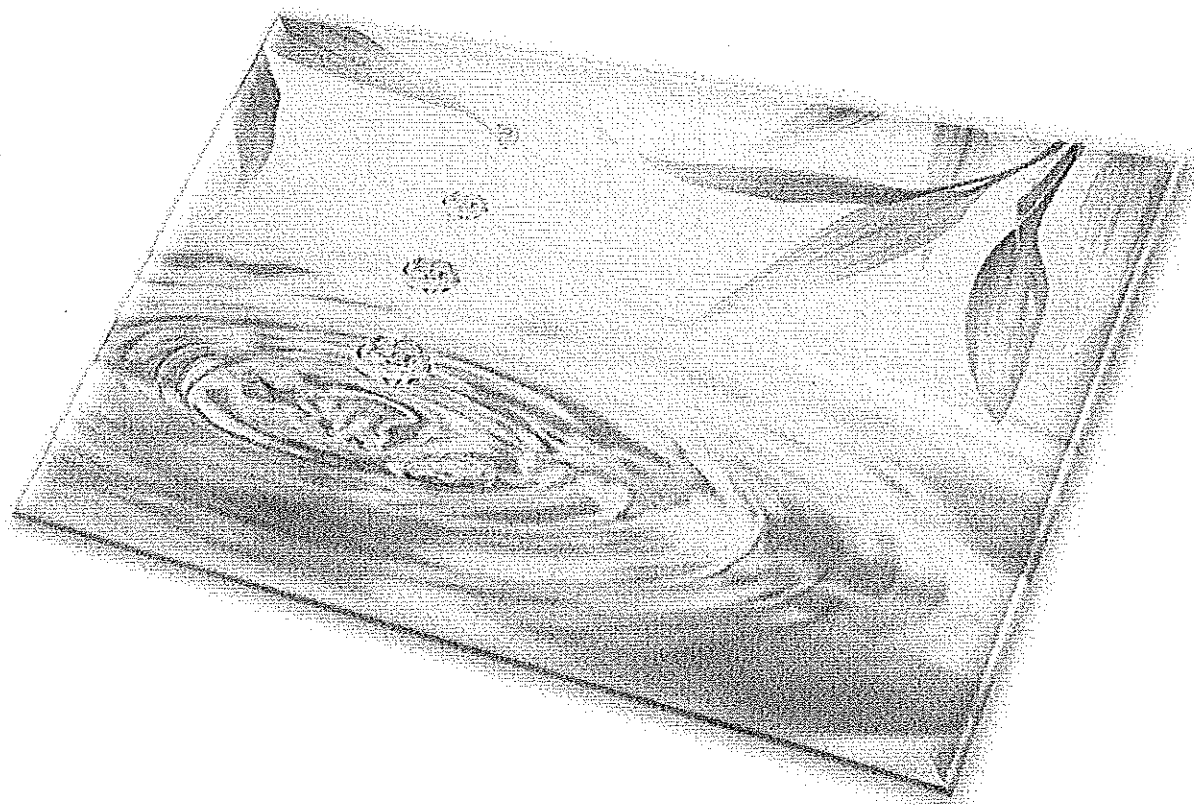
**INTERNATIONAL CONFERENCE ON IONIC
LIQUIDS 2013**

(ICIL 13)

Advances and Innovations in Ionic Liquids

11-13 December 2013

Langkawi Island, Kedah, Malaysia



**UNIVERSITY
OF MALAYA**



1210	<p align="center">OC3-12</p> <p>Ionic liquid as an additional electrolyte in solid polymer electrolyte. <i>Nur Hasyareeda bt Hassan, National University of Malaysia (UKM), Malaysia</i></p>	<p align="center">OE3-12</p> <p>Prediction of ionic liquids analogues refractive indices. <i>Kaveh Shahbaz, Taylors University, Malaysia</i></p>
1240	Lunch	
	Oral presentation: Parallel Session 4	
	HALL A	HALL B
1400	<p align="center">OC4-13</p> <p>Mesogenic and spin crossover properties of [Co(L)3](BF4)2 ionic liquids. <i>Norbani Abdullah, University of Malaya (UM), Malaysia</i></p>	<p align="center">OE4-13</p> <p>Reuse of oilfield produced water treated by combination coagulation-flocculation and microfiltration technique. <i>Mohammed Thamer, University of Technology-Baghdad (UOT), Iraq</i></p>
1420	<p align="center">OC4-14</p> <p>Synthesis and characterization of Iron(II) metal complex as spintronic material <i>Afiq bin Azil, University of Malaya (UM), Malaysia</i></p>	<p align="center">OE4-14</p> <p>Synthesis of SBA-15 mesoporous silica material and its application in methylene blue. <i>Sabri Anaam, University of Technology-Baghdad (UOT), Iraq</i></p>
1440	<p align="center">OC4-15</p> <p>Synthesis and antimicrobial activity of active pharmaceutical ingredients-ionic liquids <i>Fatimah Julia Romell, Universiti Teknologi PETRONAS (UTP), Malaysia</i></p>	<p align="center">OE4-15</p> <p>Flow characteristics of analogous ionic liquids (AIL) <i>Mohammed Abdul Hakim AlSaadi, University of Malaya (UM), Malaysia</i></p>
1500	Tea Break	
	Oral presentation: Parallel Session 5	
	HALL A	HALL B
1520	<p align="center">OC5-16</p> <p>New 2,5-disubstituted-1,3,4-oxadiazole derivatives bearing thioether groups: Synthesis and characterization. <i>Nafal Nazarbahjat, University of Malaya (UM), Malaysia</i></p>	<p align="center">OE5-16</p> <p>Morphological change of lignocellulosic biomass upon pretreatment with deep eutectic solvents (DESS) <i>Ahmad Anas Nagoor Gunny, University Malaysia Perlis (UniMAP), Malaysia</i></p>
1540	<p align="center">OC5-17</p> <p>Synthesis and characterization of mixed-valence copper alkanoates as low bandgap photovoltaic and magnetic metallomesogenic materials. <i>Naima Sharmin, University of Malaya (UM), Malaysia</i></p>	<p align="center">OE5-17</p> <p>Performance of ionic liquid on the extraction of mercury using hollow fiber supported liquid membrane (HFSLM) <i>Ezalia Mohd Fauzi, University of Malaya (UM), Malaysia</i></p>

OE5-16: MORPHOLOGICAL CHANGE OF LIGNOCELLULOSIC BIOMASS UPON PRETREATMENT WITH DEEP EUTECTIC SOLVENTS (DESS)

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Abstract: Deep Eutectic Solvents (DESS) has emerged as new type of Ionic liquids which exhibit similar characteristic with the conventional ILs but with additional advantages. Unlike conventional ILs, DESSs are made from renewable, cheaper and greener components. Besides, the process synthesis is relatively easier. In light o the wide application of the conventional ILs in the pretreatment of lignocelluloses, it is interesting to study the application of DESSs for degrading biomass. For this purpose, MCC (microcrystalline cellulose) structure was used as a model cellulose/substrate to study the structural change of the substrate using DESSs. This is achieved by using Thermal Gravitational Analysis (TGA) and X-ray Diffraction Methods. Results showed a great reduction of crystalline structure of MCC treated with the DESSs. In addition, the effect of structural change was also studied using the real biomass pretreated with DESSs. The work was carried out using Scanning Electron Microscopy (SEM) as tool to analyze the structural changes in the Rice Husk treated with DESSs.

Keyword: SEM, TGA, XRD, DESSs, Ionic Liquids, Lignocellulosic Biomass