

الندوة السنوية السعودية اليابانية الثامنة عشرة

العمليات الحفزية في تكرير البترول والبتر وكيمائيات

18th Annual Saudi -Japan Symposium

Catalysts in Petroleum Refining & Petrochemicals

PROCEEDINGS

King Fahd University of Petroleum & Minerals
Dhahran 31261, Saudi Arabia

16-17 November 2008



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18th Annual Saudi-Japan Symposium

Catalysts in Petroleum Refining & Petrochemicals

KFUPM Research Institute Bldg. 15; 4th Floor, Dhahran, Saudi Arabia, November 16-17, 2008

Day 1: Sunday, November 16, 2008

OPENING REMARKS SESSION

Chairman: *Dr. Sulaiman Al-Khattaf*

8:00 *Registration & Coffee Break*

8:30 *Opening Remarks*

- **H.E. Dr. Khaled S. Al-Sultan**, Rector of KFUPM
- **Dr. Sachio Asaoka**, Head Japanese Delegation, The Japan Petroleum Institute, JPI
- **Mr. Kazuhisa Okumura**, Deputy General Manager, Technical Cooperation Dept.-JCCP

SESSION 1. HYDROPROCESSING

Chairman: *Dr. Atsushi Satsuma*

- 9:00 1. **Keynote Paper:**
 "[Hydrocracking on Nanoporous Zeolite Catalysts](#)" 1
 Dr. Sachio Asaoka, *University of Kitakyushu, Japan*
- 9:30 2. "[HDS Screening Capabilities Using Avantium's Parallel Fixed Bed Technology](#)" 12
 Dr. Peter Mangnus, *Avantium Technologies, The Netherlands*
- 10:00 *Coffee Break*
- 10:15 3. "[Development of HDS Catalyst Using Comparative Studies of Model Feed Experiments & Quantum Chemical Studies](#)" 15
 Mr. Hiroyuki Nakamura, *Japan Energy Corporation*
- 10:45 4. "[Advances in Unicracking for Maximum Distillate Production](#)" 25
 Dr. Suheil Abdo, *UOP, USA*
- 11:15 5. "[Engineering Fixed Bed Hydrocarbon Conversion Reactors to Control Pressure Drop Increases](#)" 28
 Dr. Ken J. Mills, *Saint-Gobain NorPro, USA*
- 11:45 *Prayer & Lunch Break*

SESSION 2. FCC*Chairman: Dr. Adnan Al-Amer*

- 13:00 6. **Keynote Paper:**
["Using Additives for Real Time FCC Catalyst Optimization"](#) 69
Mr. Martin Evans, *INTERCAT Inc., USA*
- 13:30 7. ["More Propylene in FCC Unit"](#) 75
Dr. Rei Hamada, *JGC Catalysts & Chemicals Ltd.*
- 14:00 8. ["Activity & Selectivity Factors that Limit Light Olefins Production: Some Proposed Solutions"](#) 89
Dr. Yiu Lau Lam, *Petrobras, Brazil*
- 14:30 Prayer & Coffee Break

SESSION 3. H₂ PRODUCTION*Chairman: Dr. Sai Katikaneni*

- 14:45 9. ["Anti-coking attributes of Ce-promoted Co-Ni/Al₂O₃ catalyst during propane dry reforming"](#) 90
Dr. Adesoji A. Adesina, *University of New South Wales, Australia*
- 15:15 10. ["Development of Themoneutral Reforming Catalyst for Hydrogen Production from Liquid Hydrocarbons"](#) 104
Dr. Shakeel Ahmed, *KFUPM, Dhahran*
- 15:45 11. ["Forced Composition Cycling of Propane Steam Reforming Using CO₂ as Carbon Gasifying Agent"](#) 110
Dr. Adesoji A. Adesina, *University of New South Wales, Australia*
- 16:15 Day One Ends

Day 2: Monday, November 17, 2008

SESSION 4. AROMATICS/ALKYLATION*Chairman: Dr. Takao Masuda*

- 8:45 Registration & Coffee Break
- 9:00 12. **Keynote Paper:**
["Novel Zeolites in Transformation of Aromatic Hydrocarbons"](#) 117
Dr. Jiri Čejka, *Academy of Science of the Czech Republic*
- 9:30 13. ["Enhancement of Conversion & Selectivity by Unsteady-state Operation in Shape-Selective Synthesis of 2,6-Dimethylnaphthalene with ZSM-5"](#) 127
Dr. Toshio Tsutsui, *Kagoshima University*
- 10:00 Coffee Break

SESSION 5. CHEMICAL SYNTHESIS*Chairman: Dr. Cemal Ercan*

- 10:15 14. **Keynote Paper:**
["Three Dimensional Cage Type Mesoporous Catalysts for Acylation & Alkylation"](#) 138
Dr. Ajayan Vinu, *National Institute for Materials Science, Tsukuba, Japan*
- 10:45 15. ["Development of New Isomerization Process for Petrochemical By-products"](#) 150
Mr. K. Watanabe, *Cosmo Oil Co., Ltd, Japan*
- 11:15 16. ["Preparation of Mono-dispersed MFI-type Zeolite Nanocrystals in Water-surfactant-oil Solution & their Application to Synthesis of Olefins from Oxygen-containing Compounds"](#) 159
Dr. Takao Masuda, *Hokkaido University, Japan*
- 11:45 Prayer & Lunch Break

SESSION 6. POLYMERIZATION*Chairman: Dr. Jiri Čejka*

- 13:00 17. **Keynote Paper:**
["Development of Propylene Polymerization Catalysts & PP Manufacturing Processes"](#) 170
Dr. Akinobu Shiga, *LUMMOX Research Lab, Japan*
- 13:30 18. ["Albemarle's Role in Polyolefin Catalysts"](#) 181
Dr. Jiang Bian, *Albemarle, Netherlands*
- 14:00 19. ["Synthesis of Bisphenol-A from Phenol & Acetone using Organic-Inorganic Modified Heteropolyacid Catalyst"](#) 199
Dr. Atsushi Satsuma, *Nagoya University, Japan*
- 14:30 20. ["Synthesis of Stable PMMA against Irradiation & Thermal Degradation Using Cobalt Tetraphenyl Porphyrin Catalyst"](#) 209
Dr. Hany Abdel Dayem, *KFU, Al-Hofuf*
- 15:00 Closing Remarks, Symposium Ends