



Technology in Petroleum Refining & Petrochemicals

Innovation towards Circular Carbon Economy

Online Symposium (Zoom Webinar): December 13-14, 2021

Day One: Monday, December 13, 2021

OPENING REMARKS SESSION

*Chairman: Dr. Hassan Al-Asiri,
KFUPM IRC-RAC*

8:30 Opening Remarks

- [Dr. Muhammad M. Al-Saggaf](#), President, KFUPM
- [Mr. Eiji Hiraoka](#), Senior Executive Director, JCCP
- [Mr. Ahmad O. Al-Khowaiter](#), CTO, Saudi Aramco
- [Mr. Takashi Matsushita](#), President, The Japan Petroleum Institute, JPI

SESSION ONE FUTURE REFINING TRENDS

*Chairman: Prof. Keiichi Tomishige,
Tohoku University*

- 9:00 1. **Keynote: Efficient CO₂ utilization through heterogeneous catalytic processes**,
Prof. Jorge Gascon, Director, KAUST Catalysis Center (KCC), KAUST Circular Carbon Initiative
- 9:30 2. **Keynote: Future trends in petroleum industry**
Mr. Takashi Matsushita, President of JPI, Executive Vice President of Idemitsu Kosan Co., Ltd., Japan

SESSION TWO CARBON RECYCLING: LOW CARBON TECHNOLOGY

*Chairman: Dr. Khalid R. Alhooshani,
KFUPM Chemistry*

- 10:00 3. **Technology challenges and opportunities in carbon capture and utilization in process industry**, *Dr. Aqil Jamal, Chief Technologist, Saudi Aramco R&DC*
- 10:20 4. **Preparation of self-sulfur-doped activated carbon from petroleum coke for electrochemical energy storage**, *Dr. Md. Abdul Aziz, KFUPM Interdisciplinary Research Center for Hydrogen & Energy Storage*
- 10:40 5. **The joint study on GHG emissions reduction technology from well to wheel perspectives in Japanese automotive fuel value-chain**, *Mr. Kenichiro Saito, ENEOS Research Institute Ltd., Japan*
- 11:00 6. **Carbon recycling technology perspectives for CO₂ emission reduction**
Prof. Takao Nakagaki, Waseda University, Japan
- 11:20 7. **Recycle processes from waste plastics to chemical feedstock**, *Prof. Toshiaki Yoshioka, Tohoku University, Japan*

11:40 Prayer & Lunch Break

SESSION THREE LOW CARBON TECHNOLOGY: CARBON DIOXIDE UTILIZATION

*Chairman: Dr. Aqil Jamal, Aramco
R&DC*

- 13:00 8. **Visible-light driven redox system for CO₂ conversion into valuable organic materials**
Prof. Yutaka Amao, Osaka City University, Japan
- 13:20 9. **CO₂ assisted oxidative dehydrogenation of hydrocarbons to produce olefins**
Dr. M. Mozahar Hossain, KFUPM Chemical Engineering
- 13:40 10. **Bifunctional tandem catalysts for the one-pass synthesis of lower olefins via CO₂ hydrogenation**, *Dr. Shohei Tada, Ibaraki University, Japan*

14:00 Day One Ends

Each presentation includes 5-minutes Q&A

Program as of Nov. 17, 2021



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SESSION FOUR CATALYST TECHNOLOGIES

*Chairman: Prof. Teruoki Tago,
Tokyo Institute of Technology*

- 8:30 11. Catalytic light alkanes conversion: Is it contributable on the way to carbon neutral realization? Prof. Wataru Ueda, Kanagawa University, Japan
- 8:50 12. Development of versatile spheroidal $MgCl_2$ polyolefin catalyst support and related innovation and spin-off challenges
Dr. Muhammad Atiqullah, KFUPM Center for Refining & Advanced Chemicals
- 9:10 13. Advanced FCC catalyst design for LPG production
Dr. Yusuke Takamiya, JGC C&C Ltd., Japan
- 9:30 14. Dearylation: a new process to enhance BTX yields in an aromatics recovery complex
Dr. Robert Hodgkins, Saudi Aramco R&DC
- 9:50 15. Catalysis by design - Synthesis of well-defined Ti and Zr surface complexes on ultra stable zeolite (Y) for refinery process, Dr. Manoja Samantaray, KAUST Catalysis Center
- 10:10 *Coffee Break*

POSTER SESSION

Moderator: KFUPM

- 10:30 10 poster presentations (seven min each - Program on Page 3)
- 11:40 *Prayer & Lunch Break*

SESSION FIVE CATALYTIC PROCESSES

*Chairman: Dr. Ali Alzaid,
Aramco R&DC*

- 12:20 16. Enhanced light olefins production using modified MFI catalyst in n-pentane cracking
Dr. Ziyauddin Qureshi, KFUPM Center for Refining & Advanced Chemicals
- 12:40 17. Novel route for on-purpose production of butadiene
Dr. Gazali Tanimu, KFUPM Center for Refining & Advanced Chemicals
- 13:00 18. Controlled autoxidation of hydrocarbon to produce value-added chemicals
Dr. Muhammad N. Siddiquee, KFUPM Department of Chemical Engineering
- 13:20 19. A study of the impact of hydrogen transfer reactions on production of olefins
Ms. Shatha A. Alabbad, Saudi Aramco R&DC
- 13:40 20. Maximizing olefins from crude – UOP integrated olefins suite
Mr. Priyesh Jani, Honeywell UOP
- 14:00 *Closing Remarks, Symposium Ends*

Each presentation includes 5-minutes Q&A

Program as of Nov. 17, 2021

Link for Registration: [REGISTRATION](#)

For more information pls. contact: KFUPM Center for Refining & Advanced Chemicals, Phone 013 8602029, Email crac@kfupm.edu.sa



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ONLINE POSTERS

Day Two: Tuesday, December 14, 2021 10:30–11:30

POSTER SESSION

*Chairman: Dr. Nabeel S. Abo-Ghander,
KFUPM CHE*

- 10:30 1. **Rapid synthesis of Hf-Beta zeolite for upgrading bio-based furan derivatives**
Dr. Ryoichi Otomo, Hokkaido University, Japan
- 10:37 2. **Cracking of botryococcene as chemical utilization of algae oil**
Mr. Ryota Miyazaki, Tsukuba University, Japan
- 10:44 3. **Stable heterogenized Pd-NHC catalysts for carbonylation reactions**
Waseem Mansour, Bassam El Ali, Mohammed Fettouhi, Wissam Iali, KFUPM Chemistry, IRC Refining & Advanced Chemicals
- 10:51 4. **Ultra-sensitive-fast NMR characterization of sulfur-heterocyclic compounds found in petroleum**
Wissam Iali, Bassam El Ali, Mohammed Fettouhi, Waseem Mansour, KFUPM Chemistry, IRC Refining & Advanced Chemicals
- 10:58 5. **Highly efficient NHC-iridium(I) catalyst for green oxidative coupling reaction of thiols**
Wissam Iali, Rami Suleiman, Bassam El Ali, Mohammed Fettouhi, KFUPM Chemistry; IRC Refining & Advanced Chemicals; IRC Advanced Materials
- 11:05 6. **Development of a shape-stabilized phase change material utilizing natural and industrial byproducts for thermal energy storage in buildings**
Mr. Khaled Mohaisen, Dr. Md Hasan Zahir, KFUPM IRC in Renewable Energy & Power Systems
- 11:12 7. **Fuel design using genetic algorithm and artificial neural network**
Mr. Faisal Albaqami, Dr. Abdul Gani Abdul Jameel, KFUPM Chemical Engineering
- 11:19 8. **Soot prediction of oxygenated fuels**
Mr. Mohammed Qasem, Dr. Abdul Gani Abdul Jameel, KFUPM Chemical Engineering
- 11:26 9. **Hydrogen sulfide and carbon dioxide removal from natural gas by a robust porous organic polymer**
Dr. Othman Charles Al-Hamouz, KFUPM Chemistry
- 11:33 10. **Synthesis of mesoporous Y-zeolite using surfactant templating for cracking catalyst applications**
Mr. Adeel Ahmad, Dr. Shakeel Ahmed, KFUPM Chemical Eng., IRC Refining & Advanced Chemicals
- 11:40 *Poster Session Ends*

Each poster is 7 minutes

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