

3 October 2013

Modeling and Optimization Symposium

BYU Chemical Engineering Welcomes

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Prospects and Challenges for Olefins Production

The International Energy Agency (IEA) has projected that the United States will overtake Saudi Arabia and Russia as the world's top oil producer by 2017. The increase is driven by upstream technologies that are unlocking light tight oil and shale gas resources and providing less expensive gas prices that give domestic industries a competitive edge. One industry that taking advantage of the inexpensive feedstock is olefin and polyolefin production including ethylene, propylene, and polymer manufacturing. Ethylene capacity in the US is projected to increase by 33.4% by 2017 with an additional 8.9 million tonnes per year ([ICIS, 2013](#)). This includes new crackers, expansions, debottlenecks and restarts. Companies announcing new crackers in the US include ExxonMobil, Chevron Phillips Chemical, Shell, Dow Chemical and Formosa Plastics. Sasol is undertaking a feasibility study for a 1.2 million tonne/year cracker at Lake Charles, Louisiana. Other companies are also considering building or partnering on world-scale crackers in the US and include Saudi Arabia-based SABIC, Brazil's Braskem, Mexichem, US-based Occidental Petroleum, and others.

This new production capacity is creating opportunities for modeling, optimization, and control of new and existing facilities. Existing facilities must remain competitive in the face of increased capacity and environmental regulations. In addition, new olefin and polymer facilities from ethane cracker feedstock will pose a set of new opportunities and challenges. This panel of experts will give a perspective on the prospects and challenges for control and optimization of new and existing facilities. Some of the areas covered with this presentation include:

- Impact of shale gas on olefins production
- Current state of the art in multivariate control of olefins production
- Current state of the art in real time optimization of olefins production
- Recommendations for design modifications on new facilities for improved performance
- Opportunities for:
 - Dynamic model identification – retuning existing applications
 - Design of Experiments (DOE) – how to identify models for a new olefins facility
 - Improved control techniques - next generation multivariate control for olefins
 - Improved optimization algorithms for next generation facilities

The format of the presentation is question and answer session with a brief introduction to set the stage for the discussion. Participants are welcome to submit questions beforehand to the moderator, John Hedengren, (john.hedengren@byu.edu) or during the session.

9 AM MDT on 3 October 2013

Join the Webinar at <http://byu.webex.com>

Password: apm2013



Presentation to be posted online afterwards: <http://www.youtube.com/user/APMonitorCom>

