Background

The TOPSØE CATALYSIS FORUM was created as a framework for an open exchange of views on catalysis in the fields of interest to Haldor Topsøe. The forum is conceived as a platform for discussions of new reactions and new principles of catalysis in an attempt to jointly look beyond the horizon. In order to facilitate an open debate and to enable all participants to make use of the information received during the meetings in their future work, the forum is held on a non-confidential basis. The TOPSØE CATALYSIS FORUM works through individual contacts and annual meetings focusing on a single topic.

The topic of the 7th TOPSØE CATALYSIS FORUM is:

Catalysis in new refinery processes

In current years, the markets for transportation fuels are shifting both globally and locally. While refiners are adapting to changing product slates and specifications, feedstocks continue to change and diversify. In the coming years both biomass, synthetic materials and heavier fossil feedstocks such as bitumen are expected to become more important and better integration and exploitation of these resources is required as we move forward.

New levels of flexibility will be required in refinery processes as products demand change and the availability of specific crudes is altered. Consequently, new and continuous innovations in the field of petroleum refining are needed. As petroleum is predicted to remain the most important single resource for transportation through year 2050, the development of new refinery technologies and catalysts will still be of paramount importance as the global economy begins to transition towards less dependence on fossil fuels.

At the Topsøe Catalysis Forum 2010 we will aim to review and discuss catalysis in new refinery processes. The emphasis of the forum lies on expanding our knowledge as we review what is currently known, recent developments within the topic and discuss views and ideas. The open-minded and informal atmosphere for sharing knowledge and ideas offered by the forum provides a basis for new understanding and innovations within the field.

Scientific committee

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Topsøe Catalysis Forum

Catalysis in new refinery processes

Munkerupgaard 19-20 August 2010

RESEARCH | TECHNOLOGY | CATALYSTS

HALDOR TOPSØE
CATALYSING YOUR BUSINESS

Programme

The TOPSØE CATALYSIS FORUM is organised as a two-day topical meeting. The first day is devoted to overview lectures which set the scene and form the basis for the discussions. On the second day, the discussions and exchange of views will take place in three groups, each organised around a specific sub-topic.
Participation is by invitation only. Besides the presenters, representatives from industrial collaboration partners are invited, but the majority of the participants are Haldor Topsøe staff. On the first day of the meeting, up to 70 participants will be present whereas about 55 will take part in the discussions on the second day. The meeting is held on a non-confidential basis.

Wednesday, 18 August

12:00-15:10 Visit to the Haldor Topsøe Headquarters

19:00 Buffet at Munkerupgaard

Thursday, 19 August

07:30-09:00 Breakfast and arrival of local participants

09:00-09:10 Welcome address, Jesper Nerlov, Haldor Topsøe

Plenary morning session - chairman: Kim Grøn Knudsen, Haldor Topsøe

09:10-10:00 **New trends in refinery processes**
Tim Hilbert, ExxonMobil

10:00-10:50 **Upgrading of Fischer-Tropsch products to produce diesel**
Dieter Leckel, Sasol

Coffee break

11:10-12:00 **Molecular modelling of refinery processes**
Michael T. Klein, University of Delaware

Lunch

Plenary afternoon session - chairman: Henrik Topsøe, Haldor Topsøe

13:30-14:20 **Advanced mass spectrometry's contribution to the petroleome**
Ryan Rodgers, Florida State University

14:20-15:10 **Surface and catalyst fouling in bitumen refining processes**
John Shaw, University of Alberta

Coffee break

15:30-16:20 **Renewables from a Refiner's perspective**
Tushar V. Choudhary, ConocoPhillips

19:00 Conference dinner

Friday, 20 August

07:30-08:45 Breakfast

08:45-09:00 Introduction to group discussions, Glen Starch-Hytoft, Haldor Topsøe

09:00-12:00 Group discussions

Grp. 1: Heavy oil upgrading
- chairman: Kristina Pilt Jørgensen, Haldor Topsøe

- **Upgrading of heavy crude oils - a review from IMP's perspective**
  Jorge Ancheyta, Instituto Mexicano del Petróleo
- **Upgrading of heavy oils with Flexicoking™**
  Tim Hilbert, ExxonMobil
- **Perspectives on upgrading heavy oil and oil-sands bitumen derived oils**
  A.K. Dalai, University of Saskatchewan

Grp. 2: FCC to diesel
- chairman: Angelica Hidalgo-Vivas, Haldor Topsøe

- **Using FCC pretreatment to increase yields and quality of diesel**
  Per Zeuthen, Haldor Topsøe
- **On the catalytic strategies to improve diesel fuel quality**
  Daniel Resasco, University of Oklahoma

Grp. 3: Biofuels
- chairman: Rasmus G. Egeberg, Haldor Topsøe

- **Status and prospects for microalgae as a source for renewable fuels**
  Jose Olivares, National Alliance for Advanced Biofuels and Bioproducts
- **Fuels from wood**
  Petri Kukkonen, UPM
- **Progress in fast pyrolysis technology, its applications and upgrading of the pyrolysis liquid**
  Wolter Prins, Ghent University

Closing session

12:00-13:00 **Climate engineering - a new challenge for chemical engineers**
Gerhard Kreysa

Closing remarks: Jesper Nerlov, Haldor Topsøe

Lunch between 13:00 and 14:30