

# Events

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## Catalysis for Fuels

Catalysis Energy Physical

### Catalysis for Fuels Faraday Discussion

24 - 26 January 2017, Cape Town, South Africa 

#### Introduction

Catalysis is a core area of contemporary science posing major fundamental and conceptual challenges, while being at the heart of the chemical industry.

Catalysis for fuels is a major theme in chemical sciences and engineering that underlies much of the key research and teaching in these subjects. It therefore presents a unifying theme around which one can bring the whole community together to act with one purpose. We will explore the modern methods being used to design and investigate new catalysts associated with energy provision. This will involve new theoretical approaches to complex catalysis; designing new catalysts for the synthesis of synthetic fuels; the design of new photocatalytic systems and how the approaches can bridge across the disciplines of physical sciences and chemical engineering.

#### Format

The Faraday Division have been organising high impact Faraday Discussions in rapidly developing areas of physical chemistry and its interfaces with other scientific disciplines for over 100 years. Faraday Discussions have a special format where research papers written by the speakers are distributed to all participants before the meeting, and most of the meeting is devoted to discussing the papers. Everyone contributes to the discussion - including presenting their own relevant research. The research papers and a record of the discussion are published in the journal Faraday Discussions.

Find out more about Faraday Discussions in this video:

## Themes

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### **Catalysts for Fuels insights from theory:**

In this session we will explore how modern theoretical methods are aiding the understanding of catalysis for energy provision. This will involve discussions on the use of theory in catalyst design, mechanism and the nature of the active site. Hence this is a good starting point for the discussion.

### **Designing new catalysts for synthetic fuels:**

In this session we will discuss ways in which new catalysts are emerging in the provision of synthetic fuels. In situ experimental methods will be particularly important.

### **Hydrocarbon conversion:**

In the production of synthetic fuels hydrocarbons are formed that require intricate catalysis to ensure they can be fully utilised. We will discuss how modern methods in in situ spectroscopies, especially with synchrotron methods, surface science and microscopy can aid the design of new catalysts. This session will provide an important platform to discuss the difficult topic of paraffin activation.

### **Novel photocatalysts: do they provide a viable option?**

In this final session we aim to explore if photocatalysis can provide some solutions in the short term with respect to energy provision. By bringing together photocatalysis and synthetic fuels scientists we aim to promote a lively discussion in important applications that address key challenges facing society at this time.

## Aims

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The aim of this discussion meeting is to develop fundamental understanding of key aspects of catalytic science related to the provision of energy, and particularly fuels.

## South African Chemical Institute Members Discount

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If you are a member of the South African Chemical Institute (SACI), you can register for this meeting at the RSC Members rate. Please contact SACI for the discount code.

## Student Poster Prize

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The winners of the student poster prize were Moritz Wolf, University of Cape Town and Xiaohui Sun, Delft University of Technology, Netherlands.

## Useful links

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### **Frequently Asked Questions**



Specific questions about the unique format

## Downloads

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**Programme**



**Preprints - Session 1 - Catalysis for Fuels**



**Preprints - Session 2 - Designing new catalysts for synthetic fuels**



**Preprints - Session 3 - Hydrocarbon conversion in the production of synthetic fuels**



**Preprints - Session 4 - Novel photocatalysts**

Speakers



Abstract Submission



Registration

