



COURSE

CHARACTERIZATION IN CATALYSIS RESEARCH

Under the auspices of NIOK a 3-day course on the characterization of solid catalysts is organized at the University of Twente from **21 to 23 June 2017**.

The course covers modern in-situ techniques to study heterogeneous catalysts. The emphasis of the course will be on characterization of industrial heterogeneous catalysts by means of spectroscopy, microscopy and diffraction.

In addition, some attention will be given to important model systems such as single-crystal surfaces, and particles on planar supports.

The number of participants is limited to 60. The fee includes the course book "Spectroscopy in Catalysis", course material, coffee/tea, 3 lunches and 1 diner and amounts to:

- € 300,- for participants from academia
- € 850,- for industrial participants

It is possible to book a hotel room in conference hotel Drienerburght, where the course will be held.

Registration and payment can be done online: <https://www.utwente.nl/ccr-course/>
Hotel reservation can be done via <http://www.drienerburght.nl>

Deadline for registration : **10 June 2017**

Lectures:

Dr. Florian Meirer & Dr. Gareth Whiting	Recent advances in operando spectroscopy & X-ray microscopy
Dr. Kees-Jan Weststrate	High vacuum techniques and model catalysts
Prof. Dr. Moniek Tromp	Synchrotron based X-Ray techniques
Dr. Huub Kooijman	X-Ray diffraction
Dr. Irene Groot	STM in catalysis research
Prof. Dr. Jacob Moulijn	Reaction based characterization (TPD, TPR, TPO, TPS)
Prof. Dr. Guido Mul	Raman and Infrared Spectroscopy
Dr. Jovana Zecevic	Advances in Transmission Electron Microscopy
Prof. Dr. Leon Lefferts	Case study catalysis engineering



Wednesday 21 June:

09:30 - 09:55h	Arrival and Coffee		
09:55 - 10:00h	Opening	Guido Mul	U Twente
10:00 – 11:30h	Recent Advances in operando spectroscopy	Florian Meirer and Gareth Whiting	U Utrecht U Utrecht
11:30 – 13.00h	X-Ray diffraction	Huub Kooijman	Shell
13.00 – 14.00h	Lunch		
14.00 – 15.30h	Advances in Transmission Electron Microscopy	Jovana Zecevic	U Utrecht
15.30 – 16.00h	Break		
16.00 – 17.30h	STM in catalysis research	Irene Groot	U Leiden
18.30 – 20.00h	Dinner		

Thursday 22 June:

07.30 – 08.30h	Breakfast		
08.45 – 10.15h	Infrared Spectroscopy	Guido Mul	U Twente
10.15 – 10.45h	Break		
10.45 – 12.15h	Synchrotron based X-Ray techniques	Moniek Tromp	UvA
12.30 – 14.00h	Lunch		
14.00 – 15.30h	Raman Spectroscopy	Guido Mul	U Twente
15.30 – 16.00h	Break		
16.00 – 17.30h	High vacuum techniques and model catalysts	Kees-Jan Weststrate	Syngaschem

Friday 23 June:

07.30 – 08.30h	Breakfast		
08.45 – 10.15h	Reaction based characterization (TPD, TPR)	Jacob Moulijn	TU Delft
10.15 – 10.45h	Break		
10.45 – 13.00h	Introduction and Case Study	Leon Lefferts	U Twente
13.00 – 14.00h	Lunch		
14.00 – 15.30h	Case Study – Discussion	Leon Lefferts	U Twente
15.30 –	Closure & Drinks		