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15<sup>TH</sup> INTERNATIONAL CONGRESS ON CATALYSIS



**15<sup>th</sup> ICC 2012**  
MUNICH · JULY 1 – 6

## 15<sup>th</sup> International Congress on Catalysis

in Munich, Germany  
July 1 – 6, 2012



**P R O G R A M**

Updated program and poster program available at

[www.icc2012.org](http://www.icc2012.org)

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## OVERVIEW PLENARY LECTURES

<b>Monday, July 2, 2012</b>	
09:30	<b>Water splitting on heterogeneous photocatalysts</b> K. Domen, University of Tokyo/J
13:50	<b>Computational chemistry: a guide for understanding catalysts structure and function</b> P. Sautet, Ecole Normale Supérieure of Lyon and CNRS/F
<b>Tuesday, July 3, 2012</b>	
09:00	<b>Engineering polyolefin solutions using advanced catalysis</b> C. Kresge, Dow Chemical Company, Midland, MI/USA
<b>Wednesday, July 4, 2012</b>	
09:00	<b>Models in heterogeneous catalysis: what has been learned?</b> H. Freund, Fritz-Haber-Institute, Berlin/D
<b>Thursday, July 5, 2012</b>	
09:00	<b>Progress towards understanding the relationships between catalyst composition and structure and catalyst activity and selectivity</b> A. Bell, University of California, Berkeley, CA/USA
<b>Friday, July 6, 2012</b>	
09:00	<b>Design and study of molecular catalysts for small molecule activation and conversion</b> R. Periana, The Scripps Research Institute, Jupiter, FL/USA

## INVITATION

**Dear colleagues,**

On behalf of the Conference Organizing Committee, I welcome you to the 15<sup>th</sup> International Congress on Catalysis, 28 years after the 8<sup>th</sup> Congress was held in Berlin. We hope that this meeting will reflect successfully the long tradition and current dynamics of the catalysis community in academia and industry. We have chosen Munich, because it is a vibrant center of research and technology and the home of two major universities and many academic centers and research institutes. Munich offers, however, also a lively cultural life ranging from Opera and Ballet to numerous museums combined with a wide variety of possibilities to sample local cuisine and last but not least the beer, that quintessential practical example of catalytic chemistry and engineering. We hope that the program that we have assembled will allow you to experience these unique traits of our city during a week filled with exciting catalysis science and technology.

Throughout its history, but specially so over the last four years, catalysis has emerged as the enabling technology in our transition towards sustainable utilization of energy resources and synthesis of chemicals, and in doing so will allow significant reductions of our carbon footprint and the elimination of the negative environmental impacts of chemical processes. We look forward to a week of intense discussion and free exchange of knowledge about all aspects of catalysis. The theme of the congress, „From fundamental understanding to catalyst design and novel processes“, highlights the rational approach to these developments by grounding industrial applications firmly on fundamental science, a tradition that has proved tremendously successful. The honorary chairman of the Congress, Prof. Gerhard Ertl, the 2007 Nobel Laureate stands as a excellent example of an approach that brings essential understanding into industrial processes and developments.

This 15<sup>th</sup> International Congress on Catalysis aims to provide a forum to show the transdisciplinary relations among theory, fundamental and applied research, as well as their realization in industry. The format and contents of the program offers the participants cross-disciplinary lecture threads that emphasize developments in diverse fields such as biocatalysis and organocatalysis, organometallic catalysis, but also photocatalysis and practical deployments of catalytic processes in industry. We have also introduced a new forum for presenting and exchanging ideas in more focused topics that are presented in parallel as posters. It is hoped that this will allow enhancing the level of involvement beyond what is possible with presenting posters.

We thank you for sharing your science, as we thank our industrial sponsors for their generous support. Without your input and without their help it would not have been possible to realize the program ahead of us. Whatever your area of expertise, we expect that knowledge will flourish and be shared during these next few days and that your new results and concepts will challenge alternate interpretations and change the way that we carry out our science in the future. We hope that you will enjoy this week with us, that you will renew the bonds with old friends and that you will leave Munich with new friends.

Johannes A. Lercher  
(Chair, Organizing Committee of the 15<sup>th</sup> ICC)

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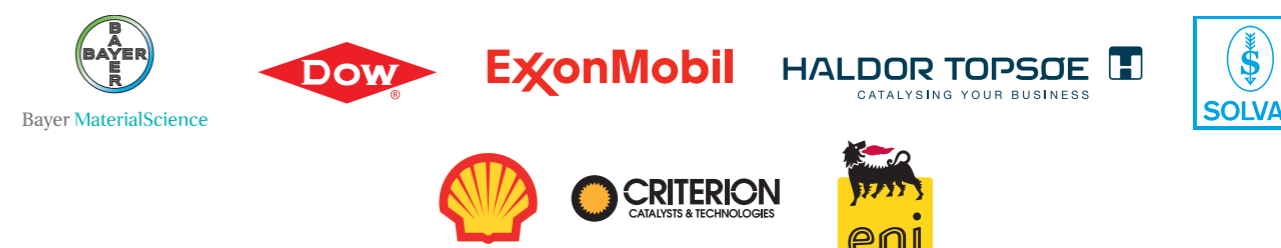
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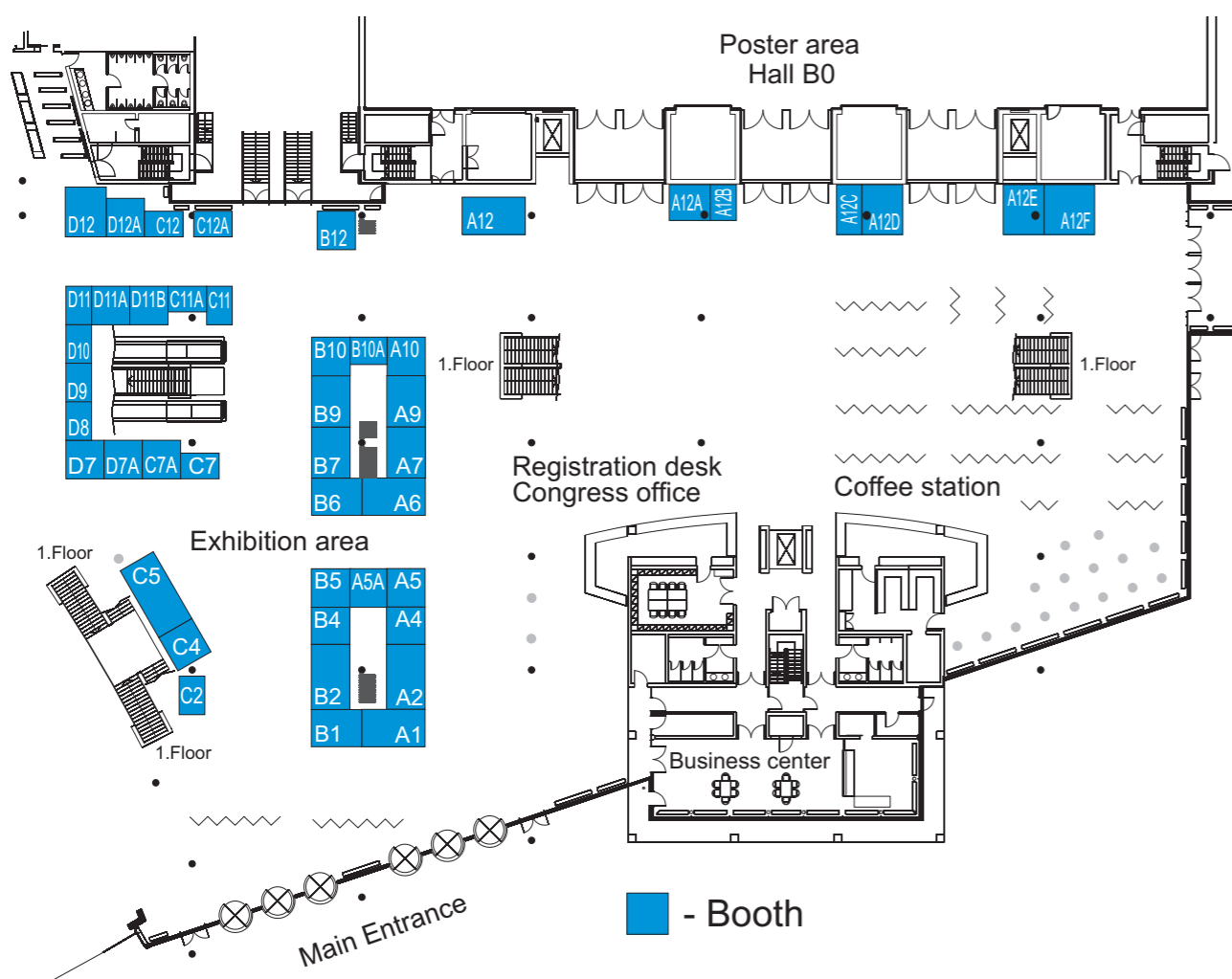


## SUPPORTER



EXHIBITION MAP

LIST OF EXHIBITORS (as of May 2, 2012)

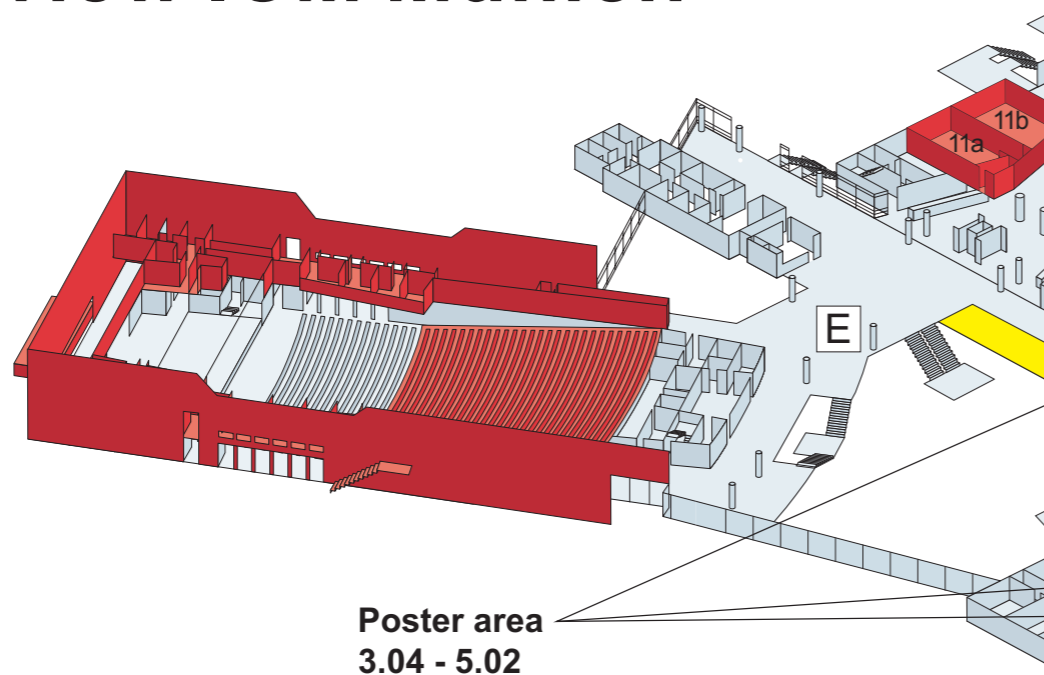


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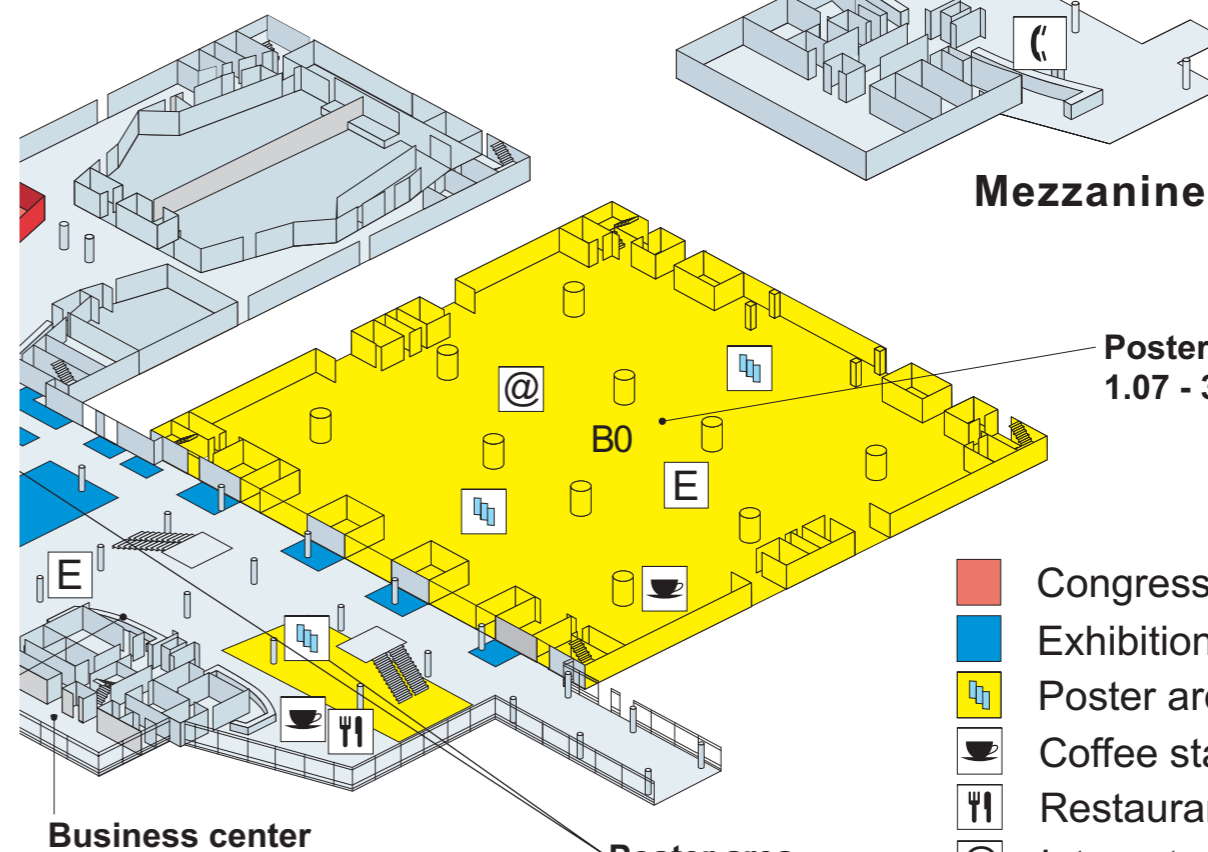
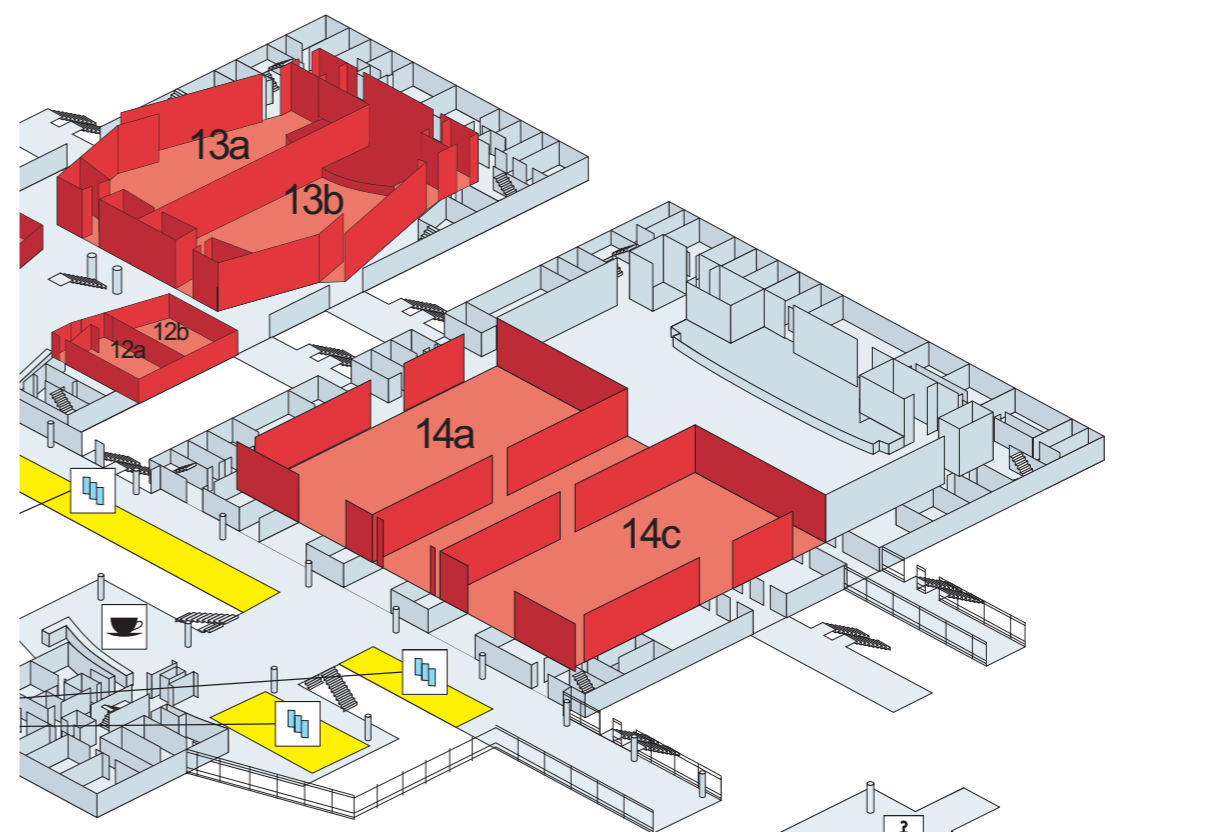
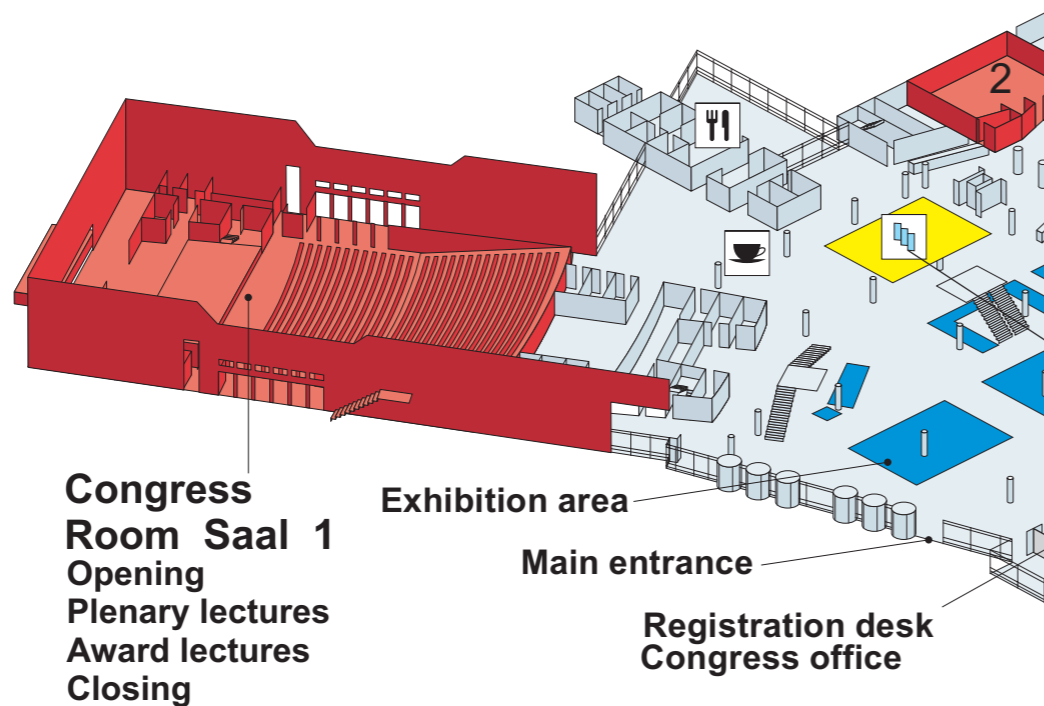
	Booth no.
Advanced Machinery & Technology Chemnitz GmbH	D7A
Alantum Europe GmbH, München	A5A
Altamira Instruments, Pittsburgh, PA, USA	B10A
AMAR Equipments Ltd., Mumbai, India / Prosense GmbH, München	A12C
Auer Remy GmbH, Hamburg	A10
BASF SE, Ludwigshafen	A1
Berghof Products + Instruments GmbH, Eningen	D11B
Büchi AG, Uster, CH	C2
Chemspeed Technologies AG, Augst, CH	A12
Dow Water & Process Solutions	B9
Elsevier B.V., Amsterdam, NL	A7
Erquan Technologie und Handels GmbH, Frankfurt am Main	C4
Evonik Industries AG, Hanau	A9
FIZ Chemie, Berlin	A12A
GeCats – German Catalysis Society	C5
HEL Ltd., Borehamwood, UK	C11A
Hiden Analytical, Kochel am See	B5
HNP Mikrosysteme GmbH, Parchim	C7
HORIBA Jobin Yvon GmbH, Bensheim	D8
hte AG, Heidelberg	B6
ILS Integrated Lab Solutions GmbH, Berlin	B1
Imtech Industry International BV, Goes, NL	C12A
KAUST King Abdullah University of Science and Technology, Thuwal, SA	B12
Linseis Messgeräte GmbH, Selb	D9
MEL Chemicals, Swinton, UK	D12
Micromeritics GmbH, Aachen	B4
Parker Autoclave Engineers, Erie, PA, USA together with Martin Busch & Sohn GmbH, Schermbeck	D12A
Parr Instrument (Deutschland) GmbH, Frankfurt am Main	A5
POROTEC GmbH, Hofheim	D10
Quantachrome GmbH & Co. KG, Odelzhausen	B7
Rubotherm GmbH, Bochum	D7
Sasol Germany GmbH, Hamburg	A6
SICAT, Paris, France	D11A
Sigma-Aldrich Chemie GmbH, Buchs, Switzerland	A4
Springer-Verlag GmbH, Heidelberg	A2
Strem Chemicals Inc., Newburyport, MA, USA	B10
Teledyne Isco, Lincoln, NE, USA together with Axel Semrau GmbH & Co. KG, Sprockhövel	D11
Top Industrie Autoclaves and High Pressure Reactors, Vaux Le Pénil, F	C12
Umicore AG & Co. KG, Hanau	B2
Vinci Technologies, Nanterre, F	A12B
Wiley-VCH Verlag GmbH & Co. KGaA, Weinheim	C11
Zinsser Analytic GmbH, Frankfurt am Main	C7A

# Overview ICM Munich

Level 1



Level 0



Mezzanine Floor

- Congress area
- Exhibition area
- Poster area
- ☕ Coffee station
- 🍴 Restaurant
- @ Internet station
- 👤 Wardrobe
- E E-Poster

PROGRAM OVERVIEW

PROGRAM OVERVIEW

Sunday, July 1, 2012	
15:00	Exhibitors stand assembly
17:00	Registration open
19:00 - 22:00	Welcome reception



Monday, July 2, 2012					
9:00	Room Saal 1	OPENING			
9:30	Room Saal 1	PLENARY: Domen			
10:30	COFFEE BREAK				
Room	13 a	13 b	14 a	14 c	11a, 11b, 12a, 12b
	Page 20	Page 22	Page 24	Page 26	Page 57
	Fine chemicals and pharmaceuticals	Novel routes to catalysis via nanotechnology	Biomass conversion to fuels	Photocatalysis	Poster symposia 1-4
10:50	KEYNOTE Apesteguia				
11:30					
11:50				KEYNOTE Li	
12:10					
12:30	LUNCH BREAK				
13:50	Room Saal 1	PLENARY: Sautet			
	Page 20	Page 22	Page 24	Page 26	
	Fine chemicals and pharmaceuticals	Novel routes to catalysis via nanotechnology	Biomass conversion to fuels	Photocatalysis	
14:50		KEYNOTE Ryoo			
15:10					
15:30	COFFEE BREAK				
	Page 20	Page 22	Page 24	Page 26	Page 57
15:50			KEYNOTE Olsbye		
16:10					
16:30					Poster symposia 5-8
16:50					
17:10					
17:30	COFFEE BREAK				
	Page 21	Page 23	Page 25	Page 27	Page 57-58
	Fine chemicals and pharmaceuticals	Novel routes to catalysis via nanotechnology	Biomass conversion to fuels	Photocatalysis	
17:50	KEYNOTE Beller				
18:10					Poster symposia 9-12
18:30					
18:50					
19:10					
19:30 - 21:30	Poster party				



PROGRAM OVERVIEW

PROGRAM OVERVIEW

Tuesday, July 3, 2012					
9:00	Room Saal 1	PLENARY: Kresge			
10:00	COFFEE BREAK				
Room	13 a	13 b	14 a	14 c	11a, 11b, 12a, 12b
	Page 28	Page 30	Page 32	Page 34	Page 58
	Fine chemicals and pharmaceuticals	Mobile source emission	Hydrotreating, hydrocracking and CC-coupling	Industrial implementation	Poster symposia 13-16
10:20		KEYNOTE Farrauto			
10:40					
11:00					
11:20					
11:40					
12:00	LUNCH BREAK				
13:20	Room Saal 1	Awardee			
	Page 28	Page 30	Page 32	Page 34	
	Fine chemicals and pharmaceuticals	Mobile source emission	Hydrotreating, hydrocracking and CC-coupling	Industrial implementation	
14:20	KEYNOTE Cole-Hamilton				
14:40					
15:00	Poster session 1 for posters with even numbers				
	Page 28	Page 31	Page 33	Page 35	Page 58
	Transformation of aromatic molecules and heteroatom functionalization	Mobile source emission	Hydrotreating, hydrocracking and CC-coupling	Industrial implementation	Poster symposia 17-20
17:20			KEYNOTE Bao		
17:40					
18:00					
18:20					
18:40					
19:00	Free evening				

Wednesday, July 4, 2012					
9:00	Room Saal 1	PLENARY: Freund			
10:00	COFFEE BREAK				
Room	13 a	13 b	14 a	14 c	11a, 11b, 12a, 12b
	Page 36	Page 38	Page 40	Page 42	Page 58
	Green synthesis	Advances in computational catalysis	Synthesis gas generation and conversion	Organo-metallic catalysis	Poster symposia 21-24
10:20		KEYNOTE Sauer			
10:40					
11:00					
11:20					
11:40					
12:00	LUNCH BREAK				
	Page 36	Page 38	Page 40	Page 42	Page 58-59
	Green synthesis	Advances in computational catalysis	Synthesis gas generation and conversion	Organo-metallic catalysis	Poster symposia 25-28
13:20					
13:40					
14:00					
14:20					
14:40					
15:00	Poster session 2 for posters with odd numbers				
	Page 36	Page 39	Page 41	Page 42	Page 59
	Olefin production and conversion	Catalysis in CO <sub>2</sub> capture, sequestration and utilization	Synthesis gas generation and conversion	Organo-metallic catalysis	Poster symposia 29-32
17:20					
17:40					
18:00					
18:20					
18:40					
19:00	Bavarian evening at Paulaner am Nockherberg				
23:00					

PROGRAM OVERVIEW

PROGRAM OVERVIEW

Thursday, July 5, 2012						
9:00	Room Saal 1	PLENARY: Bell				
10:00	COFFEE BREAK					
Room	13 a	13 b	14 a	14 c	11a, 11b, 12a, 12b	
	Page 44	Page 46	Page 48	Page 50	Page 59	
	Platform and specialty chemicals from renewables	Catalysis in CO <sub>2</sub> capture, sequestration and utilization	Fuel cell catalysis	Organo-catalysis/ biocatalysis	Poster symposia 33-36	
10:20						
10:40						
11:00						
11:20						
11:40						
12:00	LUNCH BREAK					
13:20	Room Saal 1	Awardee				
	Page 44	Page 47	Page 48	Page 50	Page 46	
	Platform and specialty chemicals from renewables	Cleaning exhaust streams	Fuel cell catalysis	Organo-catalysis/ biocatalysis	Room 11a	
14:20			KEYNOTE Neurock	KEYNOTE Reetz	ROADMAP CATALYSIS Mills	
14:40						
15:00	COFFEE BREAK					
	Page 44	Page 47	Page 48	Page 50	Page 59	
	Platform and specialty chemicals from renewables	Cleaning exhaust streams	Fuel cell catalysis	Organo-catalysis/ biocatalysis	Poster symposia 37-40	
15:20	KEYNOTE Davis					
15:40						
16:00						
16:20						
16:40						
17:00	COFFEE BREAK					
	Page 45	Page 47	Page 49	Page 51	Page 60	
	Platform and specialty chemicals from renewables	Cleaning exhaust streams	Novel concepts in acid-base catalysis	Organo-catalysis/ biocatalysis	Poster symposia 41-44	
17:20		KEYNOTE Bukhtiyarov				
17:40						
18:00						
18:20						
18:40						
19:00						
20:00	Congress Dinner					
24:00						
20:30	Students party					
01:00						

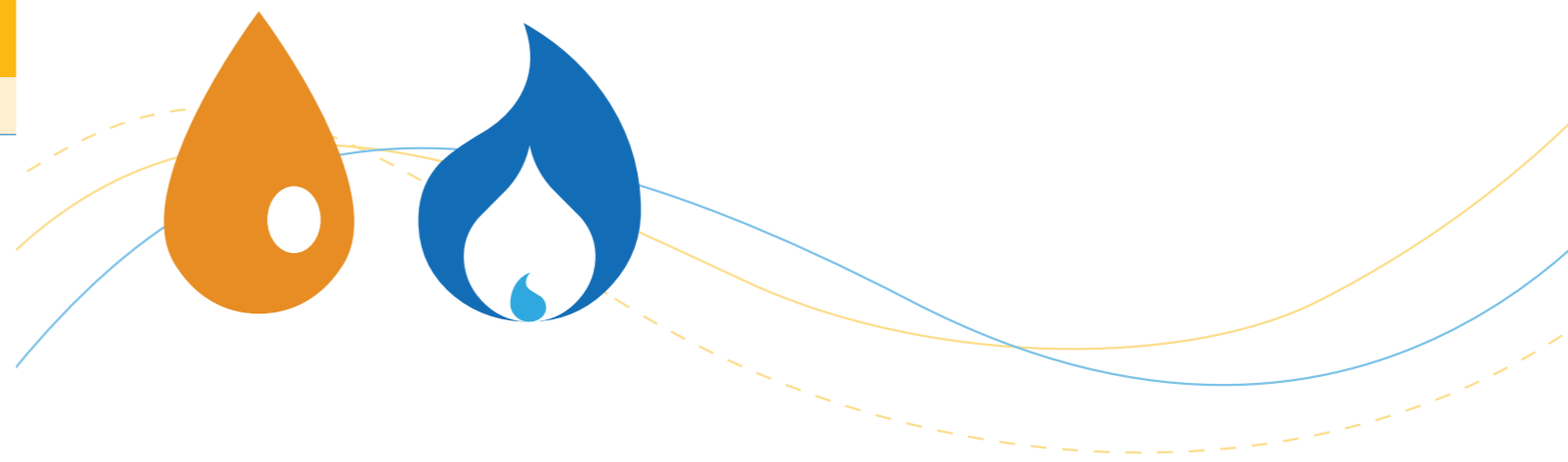
Friday, July 6, 2012					
9:00	Room Saal 1	PLENARY: Periana			
10:00	COFFEE BREAK				
Room	13 a	13 b	14 a	14 c	
	Page 52	Page 53	Page 54	Page 56	
	Selective oxidation	From mechanistic insides to advances in reactor technology	Catalysts for clean fuels production	Green synthesis	
10:20				KEYNOTE Gladden	
10:40					
11:00					
11:20					
11:40					
12:00	LUNCH BREAK				
	Page 52	Page 53	Page 54	Page 56	
	Selective oxidation	From mechanistic insides to advances in reactor technology	Catalysts for clean fuels production	Green synthesis	
13:20		KEYNOTE Marin			
13:40					
14:00					
14:20					
14:40					
15:00	COFFEE BREAK				
	Page 52	Page 53	Page 55	Page 56	
	Selective oxidation	From mechanistic insides to advances in reactor technology	Catalysts for clean fuels production	Green synthesis	
15:20					
15:40					
16:00	Room Saal 1	CLOSING CEREMONY			

Sunday, July 1, 2012

15:00 Exhibitors stand assembly

17:00 Registration open

19:00  
22:00 **WELCOME RECEPTION**



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oil



natural gas



wind



biofuels



efficiency



## LECTURE PROGRAM

## LECTURE PROGRAM

## Monday, July 2, 2012

Room Saal 1

09:00 **OPENING**  
**Johannes A. Lercher**, TU München/D Chairman of ICC 2012  
**Walter Leitner**, RWTH Aachen University/D Chairman of the German Catalysis Society  
**Can Li**, Dalian Institute of Chemical Physics/PRC Chairman of IACS  
*Chairs: S.H. Moon, Seoul National University/ROK; G.A. Somorjai, University of California, Berkeley, CA/USA*

09:30 **PLENARY LECTURE**  
**Water splitting on heterogeneous photocatalysts**  
 K. Domen, University of Tokyo/J

10:30 COFFEE BREAK

Room 13 a

**Fine chemicals and pharmaceuticals** (to be continued on Tuesday)

*Chairs: C. Coperet, ETH Zürich/CH; I. Kozhevnikov, University of Liverpool/UK*

10:50 **KEYNOTE LECTURE**  
**The role of solvent in heterogeneous catalysis: a compressive approach for hydrogenation reactions**  
 C. Apesteguía, N. Bertero, A. Trasarti, A. Marchi, INCAPE, Santa Fe/RA

11:30 **Bifunctional activation and heterolytic cleavage of ammonia N-H bond and dihydrogen H-H bond silica-grafted Ta(V) imido amido surface complex**  
 Y. Kaya, H. Jia, M. Taoufik, E.A. Quadrelli, University of Lyon-CNRS, Villeurbanne/F

11:50 **Oxidation of hydrocarbons and alcohols, including glycerol, with H<sub>2</sub>O<sub>2</sub> catalysed by the Os<sub>3</sub>(CO)<sub>12</sub>/pyridine reagent**  
 L.S. Shul'pina, Nesmeyanov Institute of Organoelement Compounds of the RAS, Moscow/RUS; M.K.G. Bizarra, D. Mandelli, Universidade Federal do ABC, Santo André/BR; Y.N. Kozlov, Semenov Institute of Chemical Physics of the RAS, Moscow/RUS; W.A. Carvalho, Universidade Federal do ABC, Santo André/BR; G.B. Shul'pin, Semenov Institute of Chemical Physics of the RAS, Moscow/RUS

12:10 **Pd-impregnated hyperbranched aminosilica materials as selective hybrid catalysts for the selective production of olefins from alkynes**  
 W. Long, E.W. Ping, S.A. Didas, N.A. Brunelli, Georgia Institute of Technology, Atlanta, GA/USA; J.T. Miller, Argonne National Laboratory, IL/USA; C.W. Jones, Georgia Institute of Technology, Atlanta, GA/USA

12:30 LUNCH BREAK (Lunch is available for self-payment at the congress venue)

Room Saal 1

*Chairs: J. Sauer, Humboldt-Universität Berlin/D; N. Rösch, TU München, Garching/D*

13:50 **PLENARY LECTURE**  
**Computational chemistry: a guide for understanding catalysts structure and function**  
 P. Sautet, Ecole Normale Supérieure of Lyon and CNRS/F

Room 13 a

**Fine chemicals and pharmaceuticals** (to be continued on Tuesday)

*Chairs: J. Eppinger, King Abdullah University of Science and Technology, Thuwal/SA; A. Katz, University of California, Berkeley, CA/USA*

14:50 **Tailoring the Cr catalytic site of Phillips catalyst with hydrosilanes: a step closer to homogeneous catalysis**  
 C. Barzan, E. Groppo, D. Gianolio, C. Lamberti, University of Turin/I; E.A. Quadrelli, University of Lyon/F; S. Bordiga, A. Zecchina, University of Turin/I

15:10 **Homogeneous and heterogeneous olefin metathesis: understanding and exploiting olefin induced deactivation**  
 K.L. Sedransk, R. Kershaw, B. Pangestu, J.C.J. Camp, G.D. Moggridge, J. McGregor, University of Cambridge/UK

15:30 COFFEE BREAK

## Monday, July 2, 2012

Room 13 a

*Chairs: C. Jones, Georgia Institute of Technology, Des Plaines, IL/USA; T.E. Müller, RWTH Aachen/D*

**Fine chemicals and pharmaceuticals** (to be continued on Tuesday)

15:50 **Direct electrocatalytic regeneration of co-enzyme NADH using glassy carbon (GC), Ni, Ti, GC-Pt and GC-Ni electrodes**  
 I. Ali, S. Omanovic, McGill University, Montreal/CDN

16:10 **Biocatalytic asymmetric reductive amination of ketones**  
 W. Kroutil, F.G. Mutti, University of Graz/A; R.C. Simon, C.S. Fuchs, D. Pressnitz, ACIB, Graz/A; F. Zepeck, Sandoz, Kundl/A; K. Tauber, University of Graz/A

16:50 **Ionic liquid phase catalysis for an asymmetric Diels-Alder reaction**  
 P. Goodrich, C. Hardacre, Queen's University, Belfast/UK; V.I. Parvulescu, University of Bucharest/RO; Y. Wang, Queen's University, Belfast/UK

17:10 **Chiral salen complex immobilised on polyamidoamine dendrimer functionalised silica – the significance of the dendrimer density**  
 A.J. McCue, R.P.K. Wells, J.A. Anderson, University of Aberdeen/UK

17:30 COFFEE BREAK

*Chairs: P. Wasserscheid, Universität Erlangen-Nürnberg, Erlangen/D; I. Di Cosimo, INCAPE, Santa Fe/RA*

17:50 **KEYNOTE LECTURE**  
**On the way to more benign energy technologies via organometallic catalysis**  
 M. Beller, Leibniz-Institut für Katalyse e.V., Rostock/D

18:30 **Enhancing the activity by controlling the hydrophobicity of MOF eggshell catalysts**  
 S. Aguado, J. Canivet, Y. Schuurman, D. Farrusseng, University of Lyon 1/F

18:50 **Non-covalently functionalised carbon nanotubes and carbon/carbon composites as novel catalysts for green and fine chemicals synthesis**  
 S. Valange, J. Souquet-Grumey, F. Jérôme, J.M. Tatibouet, J. Barrault, University of Poitiers/F; J. Thébaud, M. Bourgeon, Snecma Propulsion Solide, Le Haillan/F

19:10 **Design of VAIBEA and VSIBEA zeolites having different kinds of V species active in methanol oxidation**  
 M. Trejda, M. Ziolk, A. Mickiewicz University, Poznan/PL; Y. Millot, UPMC Univ Paris 6 - CNRS/F; K. Chalupka, TU Lodz/PL; M. Che, S. Dzwigaj, UPMC Univ Paris 6, CNRS, 7197/F

19:30

21:30 **Poster party**

## LECTURE PROGRAM

## LECTURE PROGRAM

## Monday, July 2, 2012

Room Saal 1

09:00 **OPENING**  
**Johannes A. Lercher**, TU München/D Chairman of ICC 2012  
**Walter Leitner**, RWTH Aachen University/D Chairman of the German Catalysis Society  
**Can Li**, Dalian Institute of Chemical Physics/PRC Chairman of IACS

*Chairs: S.H. Moon, Seoul National University/ROK; G.A. Somorjai, University of California, Berkeley, CA/USA*

09:30 **PLENARY LECTURE**  
**Water splitting on heterogeneous photocatalysts**  
 K. Domen, University of Tokyo/J

10:30 COFFEE BREAK

Room 13 b

## Novel routes to catalysis via nanotechnology

*Chairs: A. Erdohelyi, University of Szeged/H; V. Kanazirev, UOP LLC a Honeywell Company, Des Plaines, IL/USA*

10:50 **Catalyst design at the subnanometer scale: the role of size, composition, support and structural fluxionality**  
 S. Lee, C. Yin, G. Kwon, G. Ferguson, J. Greeley, L. Curtiss, B. Lee, S. Seifert, R. Winans, Argonne National Laboratory, IL/USA; M. di Vece, S. Vajda, Argonne National Laboratory, IL and Yale University, New Haven, CT/USA

11:10 **Lewis-acid catalysis using metallocalixarene complexes: Bridging the heterogeneous-homogeneous gap**  
 P. Nandi, A. Solovyov, A. Katz, University of California at Berkeley, CA/USA

11:30 **2D zeolites as practical and fundamental expansion of zeolites into new dimensions**  
W.J. Roth, J. Cejka, Institute of Physical Chemistry of the AS of the Czech Republic, Prague/CZ

11:50 **Structural and catalytic properties of acid and redox surface sites on [V,Al]-ITQ-6 bifunctional nanosheets**  
 M.K. de Pietre, C.A. Franchini, M.A. Fraga, Instituto Nacional de Tecnologia, Rio de Janeiro/BR; H.O. Pastore, UNICAMP, Campinas/BR

12:10 **First-principles design of highly active and selective CeO<sub>2</sub> catalysts for phosgene-free synthesis of aromatic isocyanates**  
 S. Laursen, D. Combata, M. Boronat, A. Corma, Universidad Politecnica Valencia-CSIC, Valencia/E

12:30 LUNCH BREAK (Lunch is available for self-payment at the congress venue)

Room Saal 1

*Chairs: J. Sauer, Humboldt-Universität Berlin/D; N. Rösch, TU München, Garching/D*

13:50 **PLENARY LECTURE**  
**Computational chemistry: a guide for understanding catalysts structure and function**  
 P. Sautet, Ecole Normale Supérieure of Lyon and CNRS/F

Room 13 b

## Novel routes to catalysis via nanotechnology

*Chairs: T. Tatsumi, Tokyo Institute of Technology, Yokohama/J; C. Louis, Universite Pierre et Marie Curie, Ivry sur Seine/F*

14:50 **KEYNOTE LECTURE**  
**Surfactant-tailored hierarchical zeolites for high catalytic performance**  
 R. Ryoo, Korea Advanced Institute of Science and Technology, Daejeon/ROK

15:30 COFFEE BREAK

## Monday, July 2, 2012

Room 13 b

## Novel routes to catalysis via nanotechnology

*Chairs: R. Ryoo, Korea Advanced Institute of Science and Technology, Daejeon/ROK; T. Maschmeyer, The University of Sydney/AUS*

15:50 **The catalysed synthesis of co-block carbon fibres**  
N.J. Coville, S. Bhoware, M. Maubane, A. Shaikjee, University of the Witwatersrand, Johannesburg/ZA

16:10 **Synthesis of Multiwalled Carbon Nanotubes (MWCNT) supported Pt and characterization of MWCNT by Point of Zero Charge (PZC)**  
Z. Zhang, G.L. Haller, Yale University, New Haven, CT/USA

16:30 **Metal-free dehydrogenation by nanocarbons: steps close to industrialization**  
J. Zhang, D.S. Su, Institute of Metal Research, CAS, Shenyang/PRC

16:50 **Single-atom-catalysis: the concept, catalyst design and applications**  
 A. Wang, B. Qiao, Dalian Institute of Chemical Physics/PRC; L.F. Allard, Oak Ridge National Laboratory, TN/USA; J. Li, Tsinghua University, Beijing/PRC; J. Liu, Arizona State University, Tempe, AZ/USA; T. Zhang, Dalian Institute of Chemical Physics/PRC

17:10 **Catalysis by isolated single atoms of palladium**  
 E.J. Peterson, A.T. DeLaRiva, A.K. Datye, University of New Mexico, Albuquerque, NM/USA; J.H. Kwak, C.H.F. Peden, Pacific Northwest National Laboratory, Richland, WA/USA; J. Miller, Argonne National Laboratory, IL/USA; L.F. Allard, Oak Ridge National Laboratory, TN/USA

17:30 COFFEE BREAK

*Chairs: M. Stöcker, SINTEF Materials and Chemistry, Oslo/N; J. Perez-Ramirez, ETH Zurich/CH*

17:50 **Characterization of catalytically-active Pt-alloy surfaces and core-shell nanoparticles using atom probe tomography**  
 T. Li, P. Bagot, Oxford University/UK; E. Marquis, Michigan University, Ann Arbor, MI/USA; E. Tsang, G. Smith, Oxford University/UK

18:10 **Revisiting classical volcano curves: formic acid decomposition on metal catalysts**  
 Y. Tang, C. Roberts, E. Wachs, Lehigh University, Bethlehem, PA/USA

18:30 **Electronic structure of model heteropolyacids and their salts. Cluster and periodic DFT study**  
 R. Tokarz-Sobieraj, R. Grybos, D. Rutkowska-Zbik, P. Niemiec, M. Witko, Institute of Catalysis and Surface Chemistry of PAS, Krakow/PL

18:50 **A combined DFT and STM study of structures and interaction with small molecules of rutile TiO<sub>2</sub>**  
X.Q. Gong, Q. Cuan, East China University of Science and Technology, Shanghai/PRC; J.G. Tao, M. Batzill, University of South Florida, Tampa, FL/USA; S.C. Li, Tulane University, New Orleans, LA/USA; U. Diebold, Vienna University of Technology/A

19:10 **Non-linear dynamics during catalytic NO<sub>2</sub> reduction: an *in situ* study by field emission techniques**  
C. Barroo, Y. De Decker, T. Visart de Bocarmé, N. Kruse, Université Libre de Bruxelles/B

19:30 –

21:30 **Poster party**

## LECTURE PROGRAM

## LECTURE PROGRAM

## Monday, July 2, 2012

Room Saal 1

09:00 **OPENING**  
**Johannes A. Lercher**, TU München/D Chairman of ICC 2012  
**Walter Leitner**, RWTH Aachen University/D Chairman of the German Catalysis Society  
**Can Li**, Dalian Institute of Chemical Physics/PRC Chairman of IACS

Chairs: S.H. Moon, Seoul National University/ROK; G.A. Somorjai, University of California, Berkeley, CA/USA

09:30 **PLENARY LECTURE**  
**Water splitting on heterogeneous photocatalysts**  
 K. Domen, University of Tokyo/J

10:30 COFFEE BREAK

Room 14 a

**Biomass conversion to fuels**

Chairs: A. Fukuoka, Hokkaido University, Sapporo/J; O. Krause, Aalto University/FIN

10:50 **Selective C-O hydrogenolysis of furfural and HMF over bimetallic Pd-Fe catalysts**  
 S. Sitthisa, W. An, D.E. Resasco, University of Oklahoma, Norman, OK/USA

11:10 **A study of the mechanism of the catalytic dehydration of D-fructose to 5-hydroxymethylfurfural using NMR and <sup>13</sup>C labeling**  
 J. Zhang, E. Weitz, Northwestern University, Evanston, IL/USA

11:30 **Fructose dehydration to 5-hydroxymethylfurfural in biphasic systems over structured heterogeneous catalysts**  
 V. Ordonsky, J. Schouten, J. van der Schaaf, A. Nijhuis, TU Eindhoven/NL

11:50 **Mechanism of hydrodeoxygenation on transition metal phosphides**  
 T. Oyama, The University of Tokyo/J; P. Bui, Virginia Tech, Blacksburg, VA/USA; D. Li, China University of Petroleum, Beijing/PRC; A. Cho, A. Iino, J. Shin, A. Takagaki, R. Kikuchi, The University of Tokyo/J

12:10 **Consequences of Ru and Cs addition on the ketonization of acetic acid on ZrO<sub>2</sub> surfaces**  
 S. Ordonez, University of Oviedo/E; E. Iglesia, University of California at Berkeley, CA/USA

12:30 LUNCH BREAK (Lunch is available for self-payment at the congress venue)

Room Saal 1

Chairs: J. Sauer, Humboldt-Universität Berlin/D; N. Rösch, TU München, Garching/D

13:50 **PLENARY LECTURE**  
**Computational chemistry: a guide for understanding catalysts structure and function**  
 P. Sautet, Ecole Normale Supérieure of Lyon and CNRS/F

Room 14 a

**Biomass conversion to fuels**

Chairs: Y. Wang, Pacific Northwest National Lab., Richland, WA/USA; H. Abrevaya, UOP Research Center - A Honeywell Company, Des Plaines, IL/USA

14:50 **Stabilisation of bio-oil using hydrogenation under mild-conditions on Pt/MWNT catalysts for bio-oil upgrading to bio-fuels**  
 C. Wang, T. Danuthai, T.P. Ang, J. Chang, A. Borgna, ICES, Singapore/SGP

15:10 **An effective production of octane from biomass-derivatives under mild conditions**  
 W.J. Xu, Q.N. Xia, Y. Zhang, Y. Guo, G.Z. Lu, Y.Q. Wang, East China University of Science and Technology, Shanghai/PRC

15:30 COFFEE BREAK

Chairs: A. Lemonidou, Aristotle University of Thessaloniki/GR; J.-P. Gilson, Laboratoire de Catalyse, Caen/F

15:50 **KEYNOTE LECTURE**  
**Catalytic conversion of alcohols to fuels – current status and future prospects**  
 U. Olsbye, University of Oslo/N

16:30 **Second generation biodiesel from hemicellulose and cellulose derived platform molecules**  
 M. Renz, A. Corma, O. de la Torre, Polytechnic University of Valencia/E

16:50 **Bifunctional metal supported solid acid catalyst for one pot synthesis of sorbitol from cellulose**  
 A. Shrotri, University of Queensland, St Lucia/AUS; A. Tanksale, Monash University, Clayton/AUS; J. Beltramini, University of Queensland, St Lucia/AUS

## Monday, July 2, 2012

Room 14 a

**Biomass conversion to fuels**

17:10 **Catalytic cracking of lignocellulosic biomass to fossil fuel additives**  
 K. Seshan, University of Twente, Enschede/NL

17:30 COFFEE BREAK

Chairs: D. Murzin, Abo Akademi University, Turku/FIN; D. Resasco, University of Oklahoma, Norman, OK/USA

17:50 **Converting vegetable oils into diesel-like hydrocarbons**  
 J.X. Han, H. Lou, Zhejiang University, Hangzhou/PRC

18:10 **Continuous green biocatalytic synthesis of biodiesel in multiphase neoteric systems**  
 P. Lozano, University of Murcia/E; E. Garcia-Verdugo, University Jaume I, Castellon/E; J.M. Bernal, University of Murcia/E; D.F. Izquierdo, M.I. Burguete, University Jaume I, Castellon/E; G. Sanchez-Gomez, University of Murcia/E; S.V. Luis, University Jaume I, Castellon/E

18:30 **Solvent effects on the hydrogenolysis of lignin over Raney Ni**  
 X. Wang, R. Rinaldi, MPI for Coal Research, Mülheim/D

18:50 **Production of gasoline, kerosene, and diesel from hydrodeoxygenation of lignin**  
 C. Zhao, J. He, J.A. Lercher, TU München, Garching/D

19:10 **Selective cleavage of lignin linkages – a molecular approach**  
 T. vom Stein, M. Meuresch, J. Klankermayer, W. Leitner, RWTH Aachen University/D

19:30

21:30 **Poster party**

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## LECTURE PROGRAM

## LECTURE PROGRAM

## Monday, July 2, 2012

Room Saal 1

09:00 **OPENING**  
**Johannes A. Lercher**, TU München/D Chairman of ICC 2012  
**Walter Leitner**, RWTH Aachen University/D Chairman of the German Catalysis Society  
**Can Li**, Dalian Institute of Chemical Physics/PRC Chairman of IACS  
*Chairs: S.H. Moon, Seoul National University/ROK; G.A. Somorjai, University of California, Berkeley, CA/USA*

09:30 **PLENARY LECTURE**  
**Water splitting on heterogeneous photocatalysts**  
 K. Domen, University of Tokyo/J

10:30 COFFEE BREAK

Room 14 c

**Cross-disciplinary workshop photocatalysis**

*Chairs: K. Domen, The University of Tokyo/J; D. Uner, Middle East Technical University, Ankara/TR*

10:50 **Historical recall of the last 50 years of photocatalysis**  
 J.-M. Herrmann, Université Lyon 1, Villeurbanne/F

11:10 **Photocatalytic hydrogen production: the role of metal centres**  
 M. Bowker, H. Bahruji, C. Morton, P. Davies, C. Brookes, Cardiff University/UK

11:30 **Photocatalytic hydrogen evolution from glycerol under visible light**  
 E. Kozlova, T. Lyubina, A. Vorontsov, V. Parmon, Boreskov Institute of Catalysis, Novosibirsk/RUS

11:50 **KEYNOTE LECTURE**  
**The roles of cocatalyst and junctions in photocatalytic hydrogen production utilizing solar energy**  
 C. Li, Dalian Institute of Chemical Physics/PRC

12:30 LUNCH BREAK (Lunch is available for self-payment at the congress venue)

Room Saal 1

*Chairs: J. Sauer, Humboldt-Universität Berlin/D; N. Rösch, TU München, Garching/D*

13:50 **PLENARY LECTURE**  
**Computational chemistry: a guide for understanding catalysts structure and function**  
 P. Sautet, Ecole Normale Supérieure of Lyon and CNRS/F

Room 14 c

**Cross-disciplinary workshop photocatalysis**

*Chairs: H. Niemantsverdriet, Eindhoven University of Technology/NL; M. Wark, Ruhr Universität Bochum/D*

14:50 **Z-scheme water splitting under visible light using ZrO<sub>2</sub>/TaON as a hydrogen evolution photocatalyst**  
 K. Maeda, S.S.K. Ma, M. Tabata, The University of Tokyo/J; R. Abe, Hokkaido University, Sapporo/J;  
 K. Domen, The University of Tokyo/J

15:10 **Development of Z-scheme photocatalyst of BiVO<sub>4</sub>-loaded Ru/SrTiO<sub>3</sub>: Rh for solar water splitting**  
 Q. Jia, K. Saito, A. Kudo, Tokyo University of Science/J

15:30 COFFEE BREAK

*Chairs: J.-M. Herrmann, IRCELYON-CNRS, Villeurbanne/F; G.J. Hutchings, University of Cardiff/UK*

15:50 **Photocatalytic reduction of nitroaromatic compounds to azoaromatics by gold nanoparticles on TiO<sub>2</sub>**  
 J. Zhao, X.B. Ke, S. Sarina, H.Y. Zhu, TU Queensland, Brisbane/AUS

16:10 **Rapid synthesis of BiOBr nano-flowers as robust visible-light-responsive photocatalysts for solar energy conversion**  
 Z. Jiang, L. Kong, University of Oxford/UK; H.F. Greer, University of St Andrews/UK; J.W. Tang, University College of London/UK; W.Z. Zhou, University of St Andrews/UK; T.C. Xiao, P.P. Edwards, Oxford University/UK

16:30 **Waterborne E. coli inactivation by TiO<sub>2</sub> photo-assisted processes: a brief overview**  
 C. Pulgarin, Ecole Polytechnique Fédérale de Lausanne/CH

16:50 **INVITED LECTURE**  
**Solar photocatalysis: large scale, solar-driven applications**  
 S. Malato, Plataforma Solar de Almería/E

17:30 COFFEE BREAK

## Monday, July 2, 2012

Room 14 c

**Cross-disciplinary workshop photocatalysis**

*Chairs: M.J. Bowker, Cardiff University, Wales/UK; V.N. Parmon, Boreskov Institute of Catalysis, Novosibirsk/RUS*

17:50 **Thermodynamics and mechanism of photocatalytic CO<sub>2</sub> reduction in the gas and the liquid phase**  
 D. Uner, M.M. Oymak, Middle East Technical University, Ankara/TR; B. Ipek, Middle East Technical University, Ankara/TR and University of Delaware, Newark, DE/USA

18:10 **Slow photon photocatalytic enhancement in titania inverse opal photonic crystals**  
 V. Jovic, T. Söhnel, J.B. Metson, G.I.N. Waterhouse, The University of Auckland/NZ

18:30 **Enhanced photocatalytic activity of LaTiO<sub>2</sub>N by Ca-modification**  
 A.E. Maegli, E.H. Otal, Empa-Swiss Federal Laboratories for Materials Science and Technology, Dübendorf/CH; T. Hisatomi, EPFL-École Polytechnique Fédérale de Lausanne/CH; L. Sagarna, S. Yoon, Empa-Swiss Federal Laboratories for Materials Science and Technology, Dübendorf/CH; M. Grätzel, PFL-École Polytechnique Fédérale de Lausanne/CH; A. Weidenkaff, Empa-Swiss Federal Laboratories for Materials Science and Technology, Dübendorf/CH

18:50 **Understanding the high reducibility of gallium(III)-doped ceria**  
 M. Calatayud, F. Tielens, University P. M. Curie, Paris/F; M.J. Vecchiotti, S. Collins, UNL CONICET, Santa Fe/RA; S. Bernal, University of Cadiz/E; A. Bonivardi, UNL CONICET, Santa Fe/RA

19:10 **Photocatalytically active hybrid thin films from ordered mesoporous TiO<sub>2</sub> by electrochemical deposition of co-catalysts in the pores**  
 M. Wark, Ruhr-Universität Bochum/D; I. Bannat, A.A. Ismail, D.W. Bahnemann, University Hannover/D

19:30 **Poster party**

21:30



## LECTURE PROGRAM

## Tuesday, July 3, 2012

Room Saal 1

Chairs: G. Bellussi, ENI S.p.A., San Donato Milanese/IT; B.C. Gates, University of California, Davis, CA/USA

09:00	<b>PLENARY LECTURE</b> <b>Engineering polyolefin solutions using advanced catalysis</b> C. Kresge, Dow Chemical Company, Midland, MI/USA
10:00	COFFEE BREAK

Room 13 a

## Fine chemicals and pharmaceuticals (continued)

Chairs: M. Iwamoto, Tokyo Institute of Technology, Yokohama/J; S. Jaenicke, National University of Singapore/SGP

10:20	<b>N-H activation by Rh via metal-ligand cooperation</b> M. Feller, Y. Diskin-Posner, L.J. W. Shimon, E. Ben-Ari, D. Milstein, Weizmann Institute of Science, Rehovot/IL
10:40	<b>Mild and selective C-H oxidation catalysis with Cp*Ir complexes – mechanism &amp; scope of application</b> U. Hintermair, M. Zhou, R. Crabtree, Yale University, New Haven, CT/USA
11:00	<b>Catalysts in action: advances in X-ray spectroscopy providing new insights faster</b> M. Tromp, TU München, Garching/D
11:20	<b>Role of subsurface hydrogen diffusion in hydrocarbon conversions on supported model catalysts</b> S. Schauer mann, W. Ludwig, A. Savara, H.-J. Freund, Fritz Haber Institute, Berlin/D
11:40	<b>Metathetical depolymerisation of solid state acrylonitrile-butadiene-rubber (NBR)</b> G. Rempel, Q. Pan, J. Wu, Y. Liu, University of Waterloo/CDN
12:00	LUNCH BREAK (Lunch is available for self-payment at the congress venue)

Room Saal 1

Chairs: A. Corma, Universidad Politecnica de Valencia/E; M. Che, Université P. et M. Curie, Paris/F

13:20	<b>AWARD LECTURE INTERNATIONAL CATALYSIS AWARD</b> <b>Catalysts live and up close: heterogeneities in space and time</b> B.M. Weckhuysen, Utrecht University/NL
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Room 13 a

## Fine chemicals and pharmaceuticals

Chairs: S. Perathoner, University of Messina/IT; B. Lücke, Leibniz-Institut für Katalyse e.V., Rostock/D

14:20	<b>KEYNOTE LECTURE</b> <b>Immobilising homogeneous catalysts using water, ionic liquids or supercritical fluids</b> D.J. Cole-Hamilton, S.L. Desset, R. Duque, U. Hintermair, M. Mokhadinyana, E. Öschner, S.P. Nolan, H. Clavier, University of St. Andrews, KY/USA; D.B.G. Williams, University of Johannesburg/ZA; M. Auduit, Ecole Nationale Supérieure de Chimie de Rennes/F
15:00	<b>Poster session 1 – for even poster numbers</b>

Room 13 a

## Transformation of aromatic molecules and heteroatom functionalization

Chairs: E. Hensen, Eindhoven University of Technology/NL; Z. Sobalik, J. Heyrovsky Institute, Praha/CZ

17:20	<b>m-xylene isomerization over ZSM-5/MCM-41 composites with adjustable porosity</b> R.J. Balasamy, T. Odedairo, M.N. Akhtar, S. Al-Khattaf, King Fahd University of Petroleum and Minerals, Dhahran/SAR
17:40	<b>UZM-14 for improved performance in aromatic transalkylation</b> E.P. Boldingh, M.G. Gatter, R.W. Broach, D.S. Lafyatis, UOP - A Honeywell Company, Des Plaines, IL/USA
18:00	<b>Hydroalkylation of benzene with acetone over bifunctional solid catalysts</b> O.V. Shutkina, O.A. Ponomareva, I.I. Ivanova, Moscow State University/RUS
18:20	<b>Highly selective N-alkylation of amines with alcohols</b> H.H. Liu, S. Jaenicke, National University of Singapore/SGP
18:40	<b>Enhanced selective hydrogenation of nitroarenes over Au supported on <math>\beta</math>-Mo<sub>2</sub>C and <math>\beta</math>-Mo<sub>2</sub>C/Al<sub>2</sub>O<sub>3</sub></b> N. Perret, X. Wang, M.A. Keane, Heriot-Watt University, Edinburgh/UK; L. Delannoy, C. Potvin, C. Louis, Université Pierre et Marie Curie - UPMC, Paris/F
19:00	



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## LECTURE PROGRAM

## LECTURE PROGRAM

## Tuesday, July 3, 2012

Room Saal 1

Chairs: G. Bellussi, ENI S.p.A., San Donato Milanese/I; B.C. Gates, University of California, Davis, CA/USA

09:00	<b>PLENARY LECTURE</b> <b>Engineering polyolefin solutions using advanced catalysis</b> C. Kresge, Dow Chemical Company, Midland, MI/USA
10:00	COFFEE BREAK

Room 13 b

## Mobile source emission

Chairs: C. Peden, Pacific Northwest Laboratory, Richland, WA/USA; J. Lauterbach, University of South Carolina, Columbia, SC/USA

10:20	<b>KEYNOTE LECTURE</b> <b>Automotive emission control: a crowning achievement in heterogeneous catalysis</b> R. Farrauto, BASF and Columbia University, Iselin, NJ/USA
11:00	<b>Aging characteristics of Pd/Al<sub>2</sub>O<sub>3</sub> automotive catalyst materials</b> X. Chen, J.W. Schwank, University of Michigan, Ann Arbor, MI/USA; Y. Cheng, M. Jagner, R.W. McCabe, Ford Motor Company, Dearborn, MI/USA
11:20	<b>The development of Short Time on Stream (STOS) SSITKA to identify true reaction intermediates in automotive catalysis</b> R. Burch, C. Hardacre, S. Chansai, Queen's University Belfast/UK
11:40	<b>Red-ox dynamics of Al<sub>2</sub>O<sub>3</sub> and Ce<sub>1-x</sub>Zr<sub>x</sub>O<sub>2</sub> supported Pd studied by time-resolved modulation excitation hard X-ray diffraction</b> G.L. Chiarello, Y. Lu, S.K. Matam, Empa-Swiss Federal Laboratories for Materials Science and Technology, Dübendorf/CH; M.A. Newton, M. Di Michiel, ESRF-European Synchrotron Radiation Facility, Grenoble/F; S. Yoon, A. Weidenkaff, D. Ferri, Empa-Swiss Federal Laboratories for Materials Science and Technology, Dübendorf/CH
12:00	LUNCH BREAK (Lunch is available for self-payment at the congress venue)

Room Saal 1

Chairs: A. Corma, Universidad Politecnica de Valencia/E; M. Che, Université P. et M. Curie, Paris/F

13:20	<b>AWARD LECTURE INTERNATIONAL CATALYSIS AWARD</b> <b>Catalysts live and up close: heterogeneities in space and time</b> B.M. Weckhuysen, Utrecht University/NL
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Room 13 b

## Mobile source emission

Chairs: O. Kröcher, Paul Scherrer Institute, Villigen/CH; F. Ribeiro, Purdue University, West Lafayette, IN/USA

14:20	<b>Ag-based perovskite as a DOC for Diesel engine exhaust</b> D.Y. Yoon, M.K. Kim, E.H. Lim, B.K. Cho, I.-S. Nam, Pohang University of Science and Technology (POSTECH)/ROK; J.W. Choung, S. Yoo, Hyundai Motor Company, Hwaseong/ROK
14:40	<b>Design strategies for development of soot oxidation multipromoted catalyst based on tunnelled and layered potassium iron oxides</b> P. Stelmachowski, P. Legutko, M. Trebala, F. Zasada, W. Piskorz, Z. Sojka, A. Kotarba, Jagiellonian University, Krakow/PL
15:00	<b>Poster session 1 – for even poster numbers</b>

## Tuesday, July 3, 2012

Room 13 b

## Mobile source emission

Chairs: R.J. Behm, Universität Ulm/D; R.J. Farrauto, BASF Catalysis LLC, Iselin, NJ/USA

17:20	<b>NO-oxidation on Pt: reversible deactivation under reaction conditions</b> W. Hauptmann, M. Votsmeier, J. Gieshoff, Umicore AG & Co. KG, Hanau/D; A. Drochner, H. Vogel, TU Darmstadt/D
17:40	<b>Effect of cation nonstoichiometry on La<sub>x</sub>MnO<sub>3</sub> perovskite for NO oxidation to NO<sub>2</sub></b> J. Chen, X. Wang, M. Shen, Tianjin University/PRC; G. Qi, W. Li, General Motors, Warren, MI/USA
18:00	<b>Electrochemical-catalytic converter for NOx emission control of lean-burn gasoline and diesel engines</b> T. Huang, National Tsing Hua University, Hsinchu/TW
18:20	<b>Cu-SSZ-13 catalysts for the selective catalytic reduction of NOx with NH<sub>3</sub>: catalyst characterization and reaction mechanisms</b> J.H. Kwak, J.H. Lee, J. Szanyi, H. Zhu, D.N. Tran, C.H.F. Peden, Pacific Northwest National Laboratory, Richland, WA/USA
18:40	<b>Inhibition of Rh sintering on ZrO<sub>2</sub> compound with Al<sub>2</sub>O<sub>3</sub> as a diffusion barrier</b> A. Morikawa, T. Tanabe, M. Hatanaka, N. Takahashi, H. Shinjo, Toyota Central R&D Labs., Inc., Aichi/J
19:00	O. Kuno, A. Sato, H. Suzuki, TOYOTA Motor Corporation, Aichi/J



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## LECTURE PROGRAM

## LECTURE PROGRAM

## Tuesday, July 3, 2012

Room Saal 1

Chairs: G. Bellussi, ENI S.p.A., San Donato Milanese/I; B.C. Gates, University of California, Davis, CA/USA

09:00	<b>PLENARY LECTURE</b> <b>Engineering polyolefin solutions using advanced catalysis</b> C. Kresge, Dow Chemical Company, Midland, MI/USA
10:00	COFFEE BREAK

Room 14 a

## Hydrotreating, hydrocracking and CC-coupling

Chairs: S.H. Moon, Seoul National University/ROK; R. Prins, ETH Zürich/CH

10:20	<b>Sulfide catalysis without coordinatively unsaturated sites. Hydrogenation, cis-trans isomerization and H<sub>2</sub>/D<sub>2</sub> scrambling over MoS<sub>2</sub> and WS<sub>2</sub></b> T. Drescher, Ruhr-Universität Bochum/D; Z. Huang, W. Bensch, A. Lotnyk, L. Kienle, Universität Kiel/D; W. Grünert, Ruhr-Universität Bochum/D
10:40	<b>Synthesis of metal phosphides by hydrogenation plasma reduction and their performance in hydrodesulfurization</b> A. Wang, M. Qin, D. Piao, Y. Wang, J. Guan, X. Li, Y. Hu, Dalian University of Technology/PRC
11:00	<b>New catalyst system for the conversion of oil residues</b> G. Bellussi, A. Landoni, R. Millini, D. Molinari, P. Pollesel, Eni S.p.A., San Donato Milanese/I; G. Rispoli, Eni S.p.A., Rome/I
11:20	<b>Deoxygenation mechanisms on Ni-promoted MoS<sub>2</sub> bulk catalysts: a combined experimental and theoretical study</b> M. Ruinat de Brimont, C. Dupont, A. Daudin, IFPEN, Solaize/F; C. Geantet, IRCELYON, Villeurbanne/F; P. Raybaud, IFPEN, Solaize/F
11:40	<b>Selective methane coupling to ethane and hydrogen catalysed by grafted tantalum or tungsten hydride</b> K.C. Szeto, A. Garron, S. Norsic, N. Merle, J. Thivolle-Cazat, University of Lyon 1, Villeurbanne/F; C. Papaioannou, BP, Naperville, IL/USA; J.M. Basset, M. Taoufik, University of Lyon 1, Villeurbanne/F
12:00	LUNCH BREAK (Lunch is available for self-payment at the congress venue)

Room Saal 1

Chairs: A. Corma, Universidad Politecnica de Valencia/E; M. Che, Université P. et M. Curie, Paris/F

13:20	<b>AWARD LECTURE INTERNATIONAL CATALYSIS AWARD</b> <b>Catalysts live and up close: heterogeneities in space and time</b> B.M. Weckhuysen, Utrecht University/NL
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Room 14 a

## Hydrotreating, hydrocracking and CC-coupling

Chairs: V.I. Parvulescu, University of Bucharest/RO; J. Schwank, University of Michigan, Ann Arbor, MI/USA

14:20	<b>Ring opening of decalin over monofunctional WO<sub>3</sub>/Al<sub>2</sub>O<sub>3</sub> or Ir/Al<sub>2</sub>O<sub>3</sub> and bifunctional Ir/WO<sub>3</sub>/Al<sub>2</sub>O<sub>3</sub> catalysts</b> R. Moraes, K. Thomas, S. Thomas, LCS, Caen/F; S. Van Donk, G. Grasso, Total Petrochemicals Research, Feluy/B; J-P. Gilson, M. Houalla, LCS, Caen/F
14:40	<b>Selective ring opening of naphthenes: from mechanistic studies with a model feed to the upgrading of a hydrotreated gas oil</b> V. Calemme, M. Ferrari, Eni Refining & Marketing Division, San Donato Milanese/I; S. Rabl, J. Weitkamp, University of Stuttgart/D
15:00	<b>Poster session 1 – for even poster numbers</b>

## Tuesday, July 3, 2012

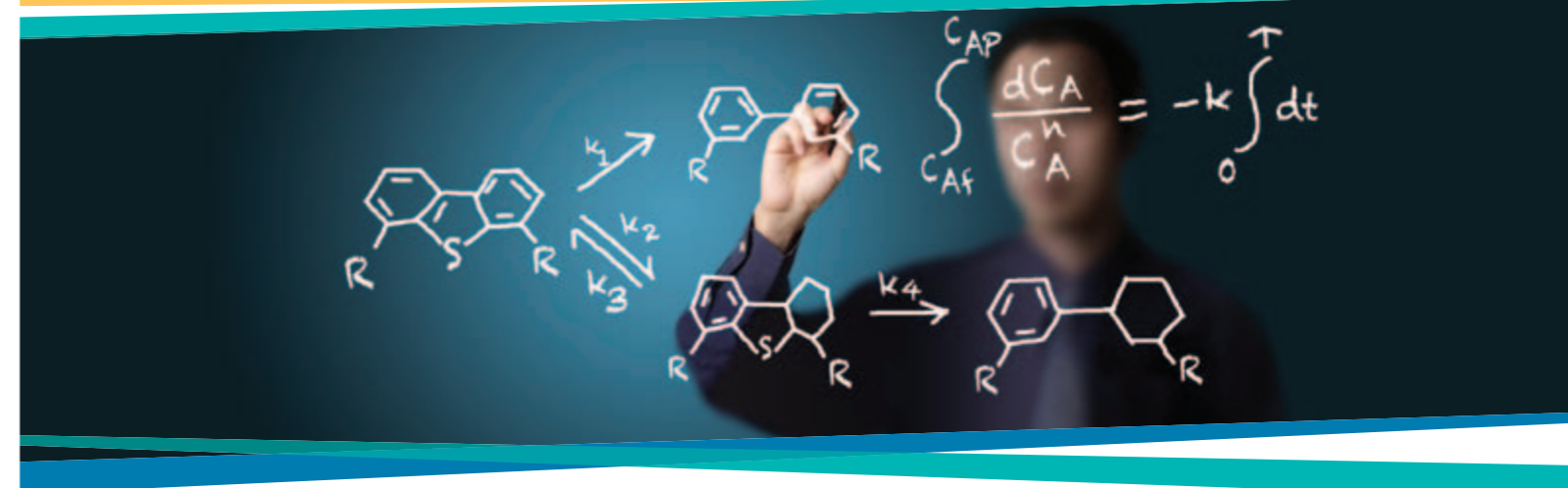
Room 14 a

## Hydrotreating, hydrocracking and CC-coupling

Chairs: G. Bellussi, ENI S.p.A., San Donato Milanese/I; A. Borgna, ICES, Singapur/SGP

17:20	<b>KEYNOTE LECTURE</b> <b>Unique catalysis chemistry of nano-confined systems</b> X. Bao, Dalian Institute of Chemical Physics of the CAS/PRC
18:00	<b>Synthesis and application of beta-KIT-6 composites in 4,6-DMDBT hydrodesulfurization</b> H. Wu, A. Duan, Z. Zhao, G. Jiang, J. Liu, China University of Petroleum, Beijing/PRC
18:20	<b>Synthesis and hydrodesulfurization properties of fullerene-like (Co, Ni)/MoS<sub>2</sub> catalysts</b> G. Berhault, A. Nogueira, R. Znaiguia, E. Blanco, P. Afanasiev, CNRS/University Lyon I, Villeurbanne/F; D. Uzio, IFP Energies Nouvelles, Solaize/F
18:40	<b>Unsupported NiMoW sulfide catalysts for hydrodesulfurization of dibenzothiophene by thermal decomposition of thiosalts</b> Y.J. Yi, G. Xiong, C. Liang, Dalian University of Technology/PRC; C.T. Williams, J. Lauterbach, University of South Carolina, Columbia, SC/USA
19:00	

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## LECTURE PROGRAM

## LECTURE PROGRAM

## Tuesday, July 3, 2012

Room Saal 1

Chairs: G. Bellussi, ENI S.p.A., San Donato Milanese/IT; B.C. Gates, University of California, Davis, CA/USA

09:00 **PLENARY LECTURE**  
**Engineering polyolefin solutions using advanced catalysis**  
 C. Kresge, Dow Chemical Company, Midland, MI/USA

10:00 COFFEE BREAK

Room 14 c

**Cross-disciplinary workshop industrial implementation**

Chairs: S. Alerasool, BASF SE, Ludwigshafen/D; J. Bricker, UOP Research Center – A Honeywell Company, Des Plaines, IL/USA

10:20 **INTRODUCTION**  
**Raw materials, energy & sustainability: fundamental and applied research**  
 J.N. Armor, GlobalCatalysis.com L.L.C., Orefield, PA/USA

10:40 **Catalytic hydrodeoxygenation of biomass pyrolysis oil to transportation fuels**  
 T. Brandvold, L. Baird, S. Lupton, T. Kalnes, D. Galloway, S. Frey, UOP - A Honeywell Company, Des Plaines, IL/USA

11:00 **Furfural – A promising platform for biofuels**  
 J.-P. Lange, E. van der Heide, J. van Buijtenen, Shell Global Solutions Int., Amsterdam/NL; R. Price, Shell Global Solutions UK, Thornton/UK

11:20 **Dry reforming of CH<sub>4</sub> with CO<sub>2</sub> at elevated pressures**  
 T. Roussière, S.A. Schunk, G. Wasserschaff, hte AG, Heidelberg/D; A. Milanov, E. Schwab, BASF SE, Ludwigshafen/D; A. Behrens, N. Schödel, Linde Group, München/D; L. Burger, O. Deutschmann, K. Herrera, Karlsruhe Institut of Technology/D; R. Gläser, B. Stolze, Universität Leipzig/D; A. Jentys, J. Lercher, L. Schulz, TU München/D

11:40 **Catalytic conversion of methanol to olefins: some progresses on catalytic materials and reaction mechanism**  
 Z. Xie, SINOPEC Corp., Beijing/PRC; Z. Liu, C. Wang, Y. Wang, H. Yang, L. Ren, H. Liu, J. Teng, Shanghai Research Institute of Petrochemical Technology-SINOPEC/PRC

12:00 LUNCH BREAK (Lunch is available for self-payment at the congress venue)

Room Saal 1

Chairs: A. Corma, Universidad Politecnica de Valencia/E; M. Che, Université P. et M. Curie, Paris/F

13:20 **AWARD LECTURE INTERNATIONAL CATALYSIS AWARD**  
**Catalysts live and up close: heterogeneities in space and time**  
 B.M. Weckhuysen, Utrecht University/NL

Room 14 c

**Cross-disciplinary workshop industrial implementation**

Chairs: T. Take, Evonik Industries AG, Hanau/D; N.J. Schödel, Linde AG, Pullach/D

14:20 **Self-assembly of noble metal alloys for ultra low temperature oxidation catalysis**  
 C.H. Kim, M. Balogh, S.H. Oh, W. Li, M. Verbrugge, General Motors Company, Warren, MI/USA; D.H. Kim, C.H.F. Peden, Pacific Northwest National Laboratory, Richland, WA/USA

14:40 **Understanding automotive catalytic washcoats using imaging techniques**  
 M.L. Bentley, A.P.E. York, Johnson Matthey, Cambridge/UK; J.A. Zeitler, M.D. Mantle, A.J. Sederman, L.F. Gladden, University of Cambridge/UK

15:00 **Poster session 1 – for even poster numbers**

## Tuesday, July 3, 2012

Room 14 c

**Cross-disciplinary workshop industrial implementation**

Chairs: R.W. Fischer, Süd-Chemie AG/TUM, Garching/D; T. Weber, Shell Projects and Technology, Amsterdam/NL

17:20 **Development of an industrial catalyst for sustainable chlorine production**  
 A. Wolf, O.F.-K. Schlüter, L. Mleczko, Bayer Technology Services, Leverkusen/D

17:40 **Mechanistic study of hydrocarbon chain growth in the Fe-catalysed Fischer-Tropsch synthesis**  
 J.V. Fletcher, Sasol Technology R&D, Eindhoven/NL; N.S. Govender, Sasol Technology R&D, Sasolburg/ZA; M.H.J.M. de Croon, J.C. Schouten, Eindhoven University of Technology/NL

18:00 **Operando FTIR investigations of Iridium catalysed hydroformylation**  
 R. Franke, D. Hess, M. Reckers, D. Rosenthal, Evonik Industries AG, Marl/D; B. Hannebauer, Evonik Industries AG, Hanau/D

18:20 **Fundamental insights into a new generation of catalysts for the manufacture of acrylonitrile via propylene ammoxidation**  
 J. Brazdil, M. Toft, S. McKenna, INEOS Technologies, Naperville, IL/USA

18:40 **Influence of  $T_p$  on the performance of a highly isoselective metallocene catalyst for propylene polymerisation**  
 K. Reichelt, L. Resconi, Borealis Polyolefine GmbH, Linz/A



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## LECTURE PROGRAM

## LECTURE PROGRAM

## Wednesday, July 4, 2012

Room Saal 1

Chairs: G. Centi, University of Messina/I; E. Iglesia, University of California, Berkeley, CA/USA

- 09:00 **PLENARY LECTURE**  
**Models in heterogeneous catalysis: what has been learned?**  
 H. Freund, Fritz-Haber-Institute, Berlin/D

10:00 COFFEE BREAK

Room 13 a

**Green synthesis (to be continued on Friday)**

Chairs: C.R. Apesteguia, INCAPE, Santa Fe/RA; G. Centi, University of Messina/I

- 10:20 **Phosphines become green: Pd-catalysed P-C coupling of molecules with carboxylic acids in water**  
 M. Ranocchiari, S. Rummelt, J.A. van Bokhoven, Paul Scherrer Institut, Villigen PSI/CH
- 10:40 **Performance of W-Nb-O/ZrO<sub>2</sub> for the gas phase dehydration of glycerol to acrolein**  
 M. Massa, A. Andersson, Lund University/S
- 11:00 **Heterogeneous catalysts for intermolecular amination reactions**  
 A. Peeters, P. Valvickens, D. De Vos, K.U. Leuven, Heverlee/B
- 11:20 **Nanostructured Ni-based catalysts for hydrogenolysis of polyalcohols**  
 T. Soták, T. Schmidt, M. Hronec, Slovak University of Technology, Bratislava/SK
- 11:40 **Making the best of the unique properties of water – a special solvent for cross-coupling reactions**  
 J. Eppinger, D. Jantke, P. Walter, S. Lauw, A. Zernickel, J. Ramasamy, King Abdullah University of Science and Technology, KAUST, Thuwal/SAR
- 12:00 LUNCH BREAK (Lunch is available for self-payment at the congress venue)

Chairs: M. Witko, Polish Academy of Sciences, Krakow/PL; J. Anderson, University of Aberdeen/UK

- 13:20 **Catalytic chemicals production using supported metal catalysts with water and carbon dioxide**  
 M. Shirai, A. Yamaguchi, O. Sato, N. Hiyoshi, National Institute of Advanced Industrial Science and Technology (AIST), Sendai/J
- 13:40 **Ru-catalyzed hydroamidation of terminal alkynes – reaction development, mechanism and applications**  
 L. Gooßen, M. Arndt, A. Fromm, K.S.M. Salih, A. Buba, F. Menges, G. Niedner-Schatteburg, TU Kaiserslautern/D
- 14:00 **Sulfonated hybrid solid material as catalyst for multi-component reactions (MCR)**  
 S. Santiago, T. Viveros, Autonomous Metropolitan University Iztapalapa, México, D.F./MEX
- 14:20 **Nanosopic magnesium fluorides - tunable catalysts for fine chemicals synthesis and biomass capitalisation**  
 S. Coman, A. Negoii, A. Nae, V.I. Parvulescu, University of Bucharest/RO; S. Wuttke, University of Munich/D; E. Kemnitz, Humboldt-Universität zu Berlin/D
- 14:40 **Silica supported alkaline earths for aldol condensation: optimum acid and base bifunctionality**  
 W. Shen, G. Tompsett, R. Xing, G. Huber, W. Curtis Conner Jr., University of Massachusetts, Amherst, MA/USA

15:00 **Poster session 2 – for odd poster numbers****Olefin production and conversion**

Chairs: M.M. Bhasin, Mid-Atlantic Technology, South Charleston, WV/USA; U. Olsbye, University of Oslo/N

- 17:20 **Sodium plus sulfur promoted supported iron catalysts for the selective production of lower olefins from synthesis gas**  
 H.M. Torres Galvis, J.H. Bitter, K.P. de Jong, Utrecht University/NL
- 17:40 **Alumina catalysed oxidative dehydrogenation of ethylbenzene. Creating selective sites by thermal retreatments.**  
 V. Zarubina, H.J. Heeres, I. Melian Cabrera, University of Groningen/NL; C. Nederlof, F. Kapteijn, M. Makkee, TU Delft/NL

## Wednesday, July 4, 2012

Room 13 a

**Olefin production and conversion**

Chairs: M.M. Bhasin, Mid-Atlantic Technology, South Charleston, WV/USA; U. Olsbye, University of Oslo/N

- 18:00 **A combined theoretical and in-situ spectroscopy study to obtain mechanistic insight into active MTO routes in chabazite derived topologies**  
 V. Van Speybroeck, K. Hemelsoet, K. De Wispelaere, J. Van der Mynsbrugge, M. Waroquier, University of Ghent/B; Q. Qian, B. M. Weckhuysen, University of Utrecht/NL
- 18:20 **Advanced isotopic studies of ethane oxidative dehydrogenation on Ni-Nb-O selective catalyst**  
 Z. Skoufa, University of Thessaloniki/GR; E. Heracleous, CPERI/CERTH, Themi/GR; A. Lemonidou, University of Thessaloniki/GR
- 18:40 **New iron based catalytic systems for the selective oligomerisation of ethylene**  
 P.-A. Breuil, A. Boudier, L. Magna, IFP New Energy, Solaize/F; P. Braunstein, University of Strasbourg/F; H. Olivier-Bourbigou, IFP New Energy, Solaize/F

19:00  
23:00**Bavarian Evening at the Paulaner am Nockherberg** (Ticket necessary)

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## LECTURE PROGRAM

## LECTURE PROGRAM

## Wednesday, July 4, 2012

Room Saal 1

Chairs: G. Centi, University of Messina/I; E. Iglesia, University of California, Berkeley, CA/USA

09:00 **PLENARY LECTURE**  
**Models in heterogeneous catalysis: what has been learned?**  
 H. Freund, Fritz-Haber-Institute, Berlin/D

10:00 COFFEE BREAK

Room 13 b

**Advances in computational catalysis**

Chairs: C. Mota, Federal University of Rio de Janeiro/BR; K. Neyman, Universitat de Barcelona/E

10:20 **KEYNOTE LECTURE**  
**Selective oxidation by solid oxides - mechanisms and catalysts**  
 J. Sauer, Humboldt-Universität zu Berlin/D

11:00 **Efficient coupling between microkinetic modeling and CFD: towards a fully first-principles catalytic reaction engineering**  
 M. Maestri, A. Cuoci, Politecnico di Milano/I

11:20 **The role of the metal-cation ensemble as the active sites in catalytic reaction**  
 W.X. Li, Dalian Institute of Chemical Physics/PRC

11:40 **Designing catalysts based on their electronic structure fingerprints: predictive structure-performance models for metal alloy catalysts**  
 H. Xin, University of Michigan, Ann Arbor, MI/USA; N. Schweitzer, Argonne National Laboratory, IL/USA; E. Nikolla, Wayne State University, Detroit, IL/USA; S. Linic, University of Michigan, Ann Arbor, MI/USA

12:00 LUNCH BREAK (Lunch is available for self-payment at the congress venue)

Chairs: J. Thybaut, Ghent University/B; M. Stoukides, Aristotele University School of Engineering, Thessaloniki/GR

13:20 **Morphology of sub-nanometer platinum particles supported on  $\gamma$ -Al<sub>2</sub>O<sub>3</sub>: effects of support chlorination and H<sub>2</sub> atmosphere**  
 C. Mager-Maury, C. Chizallet, IFP Energies nouvelles, Solaize/F; P. Sautet, ENS Lyon/F; P. Raybaud, IFP Energies nouvelles, Solaize/F

13:40 **Reaction path analysis of propene selective oxidation over V<sub>2</sub>O<sub>5</sub> and V<sub>2</sub>O<sub>5</sub>/TiO<sub>2</sub>**  
 K. Alexopoulos, M.-F. Reyniers, G.B. Marin, Ghent University/B

14:00 **Mechanistic and microkinetic studies of N<sub>2</sub>O decomposition over alkaline earth nanooxides – tuning the elementary steps by basicity variation**  
 F. Zasada, W. Piskorz, P. Stelmachowski, A. Kotarba, Z. Sojka, Jagiellonian University, Krakow/PL

14:20 **A comparison in activity between transition-metal oxides and transition metals**  
 A. Vojvodic, Stanford University, CA/USA; F. Abild-Pedersen, F. Studt, T. Bligaard, SLAC National Accelerator Laboratory, Menlo Park, CA/USA; J.K. Nørskov, Stanford University, CA/USA

14:40 **Towards a first-principles electronic structure based understanding of reactor response in heterogeneous catalysis**  
 S. Matera, K. Reuter, TU München, Garching/D

15:00 **Poster session 2 – for odd poster numbers**

## Wednesday, July 4, 2012

Room 13 b

**Catalysis in CO<sub>2</sub> capture, sequestration and utilization** (to be continued on Thursday)

Chairs: F. Solymosi, University of Szeged/H; C. Mirodatos, CNRS-UCBL, Villeurbanne/F

17:20 **CO<sub>2</sub> reforming of CH<sub>4</sub> to produce synthesis gas over modified and un-modified Ni/Al<sub>2</sub>O<sub>3</sub> catalysts**  
 S. Sengupta, G. Deo, Indian Institute of Technology Kanpur/IND

17:40 **CO<sub>2</sub> hydrogenation over Ru electropromoted catalysts**  
 D. Theleritis, S. Souentie, A. Katsaounis, C.G. Vayenas, University of Patras/GR

18:00 **Understanding the reaction mechanism and the role of Rh nanoparticles in the CO<sub>2</sub> hydrogenation to methane at low temperature**  
 A. Karelovic, C. Swalus, P. Ruiz, Université Catholique de Louvain/B

18:20 **Carbon nanotubes intercrossed Cu/Zn based catalyst for CO<sub>2</sub> hydrogenation to methanol/dimethyl ether**  
 Q. Zhang, Y.Z. Zuo, X. An, M.H. Han, J.F. Wang, Y. Jin, F. Wei, Tsinghua University, Beijing/PRC

18:40 **Catalytic conversion of CO<sub>2</sub> and ethylene to acrylic acid**  
 S.Y.T. Lee, M. Cokoja, F.E. Kühn, M. Drees, TU München, Garching/D

19:00 **Bavarian Evening at the Paulaner am Nockherberg** (Ticket necessary)

23:00

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## LECTURE PROGRAM

## LECTURE PROGRAM

## Wednesday, July 4, 2012

Room Saal 1

Chairs: G. Centi, University of Messina/I; E. Iglesia, University of California, Berkeley, CA/USA

09:00 **PLENARY LECTURE**  
**Models in heterogeneous catalysis: what has been learned?**  
 H. Freund, Fritz-Haber-Institute, Berlin/D

10:00 COFFEE BREAK

Room 14 a

## Synthesis gas generation and conversion

Chairs: M. Claeys, University of Cape Town/ZA; M. Flytzani-Stephanopoulos, Tufts University, Medford, MA/USA

10:20 **Macroporous supported Cu-V oxide: active catalysts for H<sub>2</sub>SO<sub>4</sub> decomposition in solar thermochemical water splitting**

M. Machida, T. Kawada, S. Hebishima, S. Hinokuma, K. Ikeue, Kumamoto University/J; S. Takeshima, Toyota Motor Corp., Susono/J

10:40 **Catalytic transformation of biofuels into synthesis gas and hydrogen over monolithic catalysts**

N. Mezentseva, V. Sadykov, V. Pelipenko, Boreskov Institute of Catalysis, Novosibirsk/RUS; A.C. Roger, University of Strasbourg/F; J.R.H. Ross, University of Limerick/IRL

11:00 **Investigation of cobalt coordination environment and support morphology effects under reaction conditions in ethanol steam reforming**

I. Ilgaz Soykal, B. Bayram, U.S. Ozkan, The Ohio State University, Columbus, OH/USA

11:20 **New approach for kinetic modeling of Fischer-Tropsch on cobalt based catalysts**

J. Yang, D. Chen, A. Holmen, Norwegian University of Science and Technology, Trondheim/N

11:40 **An in situ XRD reaction cell for the characterisation of a Co/ $\gamma$ -Al<sub>2</sub>O<sub>3</sub> catalyst under Fischer-Tropsch synthesis conditions**

B. Clapham, T. Feltes, N. Fischer, M. Claeys, University of Cape Town, Rondebosch/ZA

12:00 LUNCH BREAK (Lunch is available for self-payment at the congress venue)

Chairs: A. Holmen, Norwegian Institute of Technology, Trondheim/N; S. Damyanova, Bulgarian Academy of Sciences, Sofia/BG

13:20 **Influence of water on deactivation of highly dispersed Co/CNF catalysts in the Fischer-Tropsch reaction studied in situ**

G.L. Bezemer, Shell, Amsterdam/NL; I.A. Dugulan, Reactor Institute Delft/NL; T.J. Remans, A.P. van Bavel, Shell, Amsterdam/NL

13:40 **Designing alkali-promoted platinum catalysts for the low-temperature water-gas shift reaction**

B. Zugic, Y. Wang, Y. Zhai, H. Saltsburg, M. Flytzani-Stephanopoulos, Tufts University, Medford, MA/USA

14:00 **Water-gas shift activity over catalysts based on ceria-copper inverse configurations**

A. López Cámara, L. Barrio, Consejo Superior de Investigaciones Científicas (CSIC), Madrid/E; G. Zhou, R. Si, J.C. Hanson, J.A. Rodríguez, Brookhaven National Laboratory, Upton, NY/USA; S. Chansai, C. Hardacre, Queen's University Belfast/UK; A. Martínez-Arias, Consejo Superior de Investigaciones Científicas (CSIC), Madrid/E

14:20 **Oxidation and reforming of light hydrocarbons over Rh/Al<sub>2</sub>O<sub>3</sub> catalyst studied in a stagnation-flow reactor**

C. Karakaya, L. Maier, O. Deutschmann, Karlsruhe Institute of Technology (KIT)/D; N.E. Mcguire, N.P. Sullivan, R.J. Kee, Colorado School of Mines, Golden, CO/USA

14:40 **Experimental and modeling analysis of CPO reformers fueled with light hydrocarbons**

D. Livio, D. Pagani, A. Donazzi, A. Beretta, G. Groppi, M. Maestri, E. Tronconi, P. Forzatti, Politecnico di Milano/I

15:00 **Poster session 2 – for odd poster numbers**

## Wednesday, July 4, 2012

Room 14 a

## Synthesis gas generation and conversion

Chairs: E. Van Steen, University of Cape Town/ZA; J.J. Spivey, Louisiana State University, Baton Rouge, LA/USA

17:20 **Mechanistic insight into dehydrogenation pathways of simple hydrocarbons and oxygenates on Pt/ceria model catalysts**

Y. Lykhach, M. Happel, T. Staudt, J. Libuda, University of Erlangen-Nürnberg/D; N. Tsud, V. Johánek, M. Vorokhta, V. Matolin, Charles University, Prague/CZ; T. Skála, C. K. Prince, Sincrotrone Trieste SCpA/I

17:40 **Dynamic structure and catalytic performance of Pd/ZnO and Pd/Ga<sub>2</sub>O<sub>3</sub> methanol reforming catalysts: an in situ study**

K. Foettinger, A. Haghofer, Vienna University of Technology/A; M. Nachtegaal, Paul-Scherrer-Institute, Villigen/CH; J.A. van Bokhoven, ETH Zurich and Paul-Scherrer-Institute, Villigen/CH; G. Rupprechter, Vienna University of Technology/A

18:00 **Catalytic consequences of oxygen chemical potential during alkane oxidation on group VIII metal clusters**

Y-H. Chin, University of California at Berkeley, CA/USA; C. Buda, University of Virginia, Charlottesville, VA/USA; M. Garcia-Dieguez, University of California at Berkeley, CA/USA; M. Neurock, University of Virginia, Charlottesville, VA/USA; E. Iglesia, University of California at Berkeley, CA/USA

18:20 **How to prepare a good methanol synthesis catalyst: structure-performance-relationships of Cu/ZnO/Al<sub>2</sub>O<sub>3</sub>**

M. Behrens, R. Schlögl, Fritz-Haber-Institute, Berlin/D

18:40 **The mechanism of the Fischer-Tropsch reaction**

R.A. van Santen, M.M. Ghouri, Eindhoven University of Technology/NL; I.M. Ciobica, Sasol Technology Netherlands B.V., Eindhoven/NL; I.A.W. Filot, E.J.M. Hensen, Eindhoven University of Technology/NL

19:00

23:00 **Bavarian Evening at the Paulaner am Nockherberg** (Ticket necessary)

## Wednesday, July 4, 2012

Room Saal 1

Chairs: G. Centi, University of Messina/I; E. Iglesia, University of California, Berkeley, CA/USA

09:00 **PLENARY LECTURE**  
**Models in heterogeneous catalysis: what has been learned?**  
 H. Freund, Fritz-Haber-Institute, Berlin/D

10:00 COFFEE BREAK

Room 14 c

**Cross-disciplinary workshop organo-metallic catalysis**

Chairs: M. Beller, Leibniz-Institut für Katalyse e.V., Rostock/D; C. Coperet, ETH Zürich/CH

10:20 **INVITED LECTURE**  
**Hydrogen transfer processes and sp<sup>3</sup>C-H functionalization**  
 M. Achard, B. Sundararaju, Z. Sahli, C. Bruneau, University of Rennes/F

11:00 **INVITED LECTURE**  
**Organometallic nanoparticles: large organometallic complexes or more?**  
 B. Chaudret, CNR Toulouse/F

11:40 **The rise of the zinc age in homogeneous catalysis?**  
 S. Enthaler, TU Berlin/D

12:00 LUNCH BREAK (Lunch is available for self-payment at the congress venue)

Chairs: F.E. Kühn, Technische Universität München, Garching/D; R. Kumar, TATA Chemicals Ltd., Pune Mulshi/IND

13:20 **INVITED LECTURE**  
**Oxidative coupling, chemistry between two „nucleophiles“**  
 A. Lei, Wuhan University/PRC

14:00 **INVITED LECTURE**  
**Organometallic chemistry and catalysis with water soluble phosphines: the enlightening story of PTA**  
 M. Peruzzini, CNR Florence/I

14:40 **Iron-catalyzed reactions: the many roles of olefins**  
 A. Jacobi von Wangelin, University of Regensburg/D

15:00 **Poster session 2 – for odd poster numbers**

Chairs: B. Chaudret, CNRS, Toulouse/F; C. Bruneau, CNRS Université de Rennes/F

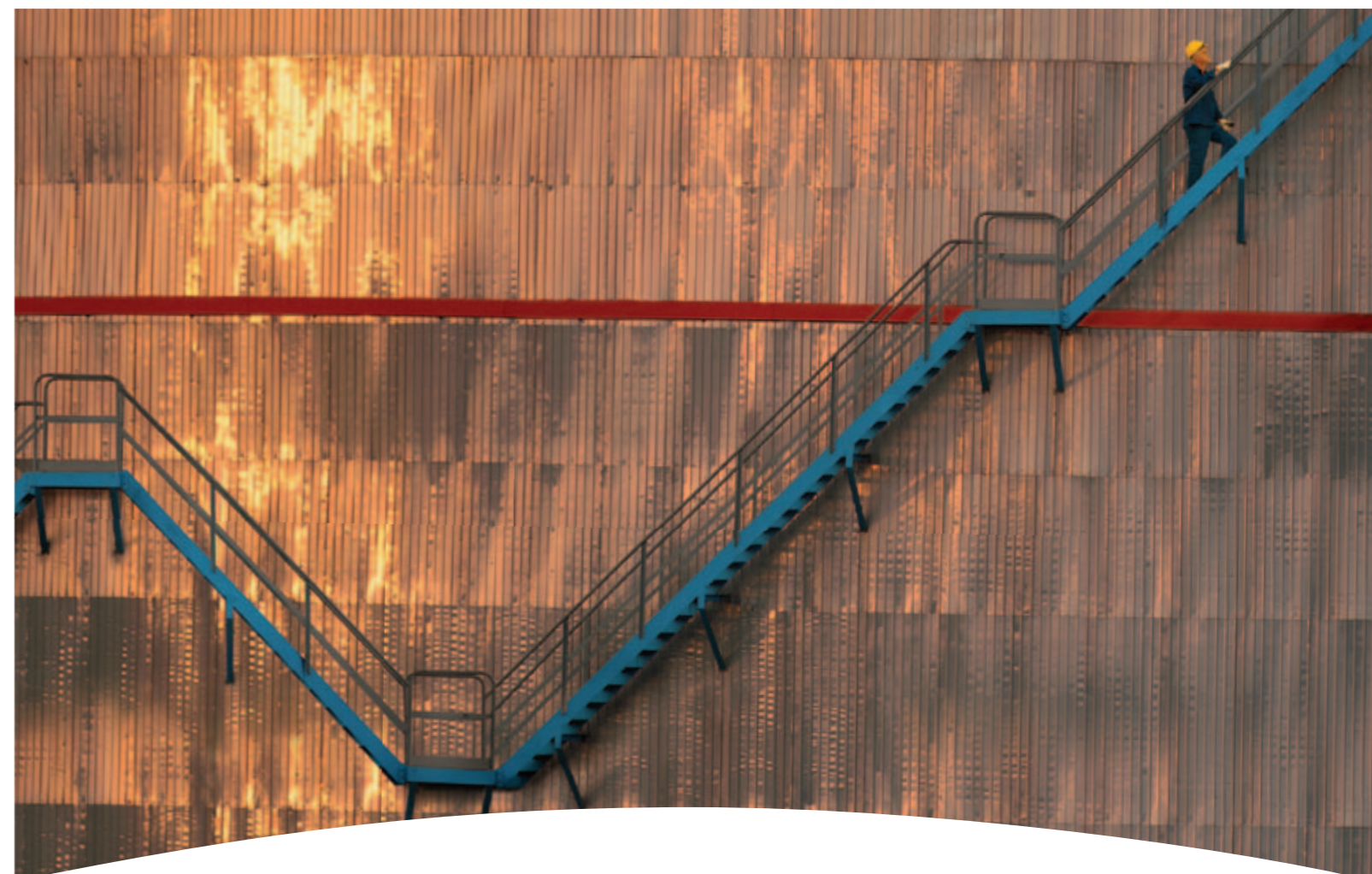
17:20 **INVITED LECTURE**  
**Homogeneous catalysis applied to the production of pharmaceutical products**  
 L. Lefort, DSM Innovative Synthesis B.V., Geleen/NL

18:00 **INVITED LECTURE**  
**Catalytic carbon dioxide – formic acid systems for hydrogen storage and delivery**  
 G. Laurenczy, EPFL Lausanne/CH

18:40 **Catalysis with oleochemicals**  
 M.A.R. Meier, Karlsruhe Institute of Technology KIT/D

19:00 –  
 23:00 **Bavarian Evening at the Paulaner am Nockherberg** (Ticket necessary)

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## LECTURE PROGRAM

## LECTURE PROGRAM

## Thursday, July 5, 2012

Room Saal 1

Chairs: F. Seitz, BASF SE, Ludwigshafen/D; F. Schüth, Max-Planck-Institut für Kohlenforschung, Mülheim/D

09:00 **PLENARY LECTURE**  
**Progress towards understanding the relationships between catalyst composition and structure and catalyst activity and selectivity**

A. Bell, University of California, Berkeley, CA/USA

10:00 COFFEE BREAK

Room 13 a

**Platform and specialty chemicals from renewables**

Chairs: N. Essayem, Universite de Lyon 1, Villeurbanne/F; A.K. Datye, University of New Mexico, Albuquerque/USA

10:20 **Molecular aspects of acid-catalyzed sugar conversion**

E.A. Pidko, G. Yang, E.J.M. Hensen, Eindhoven University of Technology/NL

10:40 **Acid-catalysed direct formation of sec-butyl levulinate from the reaction of cellulose with 2-butene in super-critical conditions**

S. Sapaly, M. Eternot, E. Rataboul, N. Essayem, CNRS-IRCELYON, Villeurbanne/F

11:00 **Polyoxometalate-supported Ru nanoparticles as efficient catalysts for conversions of cellulose and inulin to hexitols in H<sub>2</sub>O**

W.P. Deng, M. Liu, Z.C. Tang, Y.L. Wang, Q.H. Zhang, Y. Wang, University of Xiamen/PRC

11:20 **Hydrolytic hydrogenation of hemicellulose**

D. Murzin, B. Kusema, N. Kumar, P. Mäki-Arvela, T. Salmi, Åbo Akademi University, Turku/FIN; L. Faba, E. Diaz, S. Ordonez, University of Oviedo/E

11:40 **Conversion of lignocellulose into platform chemicals by carbon and supported metal catalysts**

A. Fukuoka, Hokkaido University, Sapporo/J

12:00 LUNCH BREAK (Lunch is available for self-payment at the congress venue)

Room Saal 1

Chairs: A.T. Bell, University of California, Berkeley, CA/USA; C. Li, Dalian Institute of Chemical Physics/PRC

13:20 **AWARD LECTURE HEINZ HEINEMANN AWARD****Catalysis using gold nanoparticles**

G. Hutchings, University of Cardiff/UK

Room 13 a

**Platform and specialty chemicals from renewables**

Chairs: C.L. Marshall, Argonne National Laboratory, IL/USA; T. Oyama, The University of Tokyo/J

14:20 **Hydrogenolysis of sorbitol over supported metal catalysts**

M. Banu, B. Viswanathan, S. Sivasanker, Indian Institute of Technology, Chennai/IND; P. Venunanalingam, Bharathidasan University, Tiruchirapalli/IND

14:40 **Titania as a water-tolerant Lewis acid catalyst for the selective conversion of glucose into 5-hydroxymethylfurfural**

M. Hara, K. Nakajima, M. Kitano, Tokyo Institute of Technology, Yokohama/J; S. Hayashi, AIST, Tsukuba/J

15:00 COFFEE BREAK

15:20 **KEYNOTE LECTURE****The critical role of OH in the selective oxidation or hydrogenolysis of biomass-derived molecules over supported metal catalysts**

R. Davis, University of Virginia, Charlottesville, VA/USA

Chairs: W. Conner, University of Massachusetts, Amherst, MA/USA; T. Zhang, Dalian Institute of Chemical Physics, Dalian/PRC

16:00 **Biomass to chemicals over tailored hierarchical zeolite catalysts**

P. Dapsens, D. Verboekend, G. Vile, C. Mondelli, J. Perez-Ramirez, ETH Zurich/CH

16:20 **Catalytic valorisation of isosorbide as versatile renewable platform chemical**

M. Rose, R. Palkovits, RWTH Aachen University/D

16:40 **Synthesis of chemicals from renewable feedstocks catalysed by polyoxometalates**

I. Kozhevnikov, University of Liverpool/UK

17:00 COFFEE BREAK

## Thursday, July 5, 2012

Room 13 a

**Platform and specialty chemicals from renewables**

Chairs: F. Jentoft, University of Oklahoma, Norman, OK/USA; X. Li, Qingdao Institute of Bioenergy and Bioprocess Technology of the CAS/PRC

17:20 **Selective oxidation of glycerol catalyzed by gold supported on different carbon materials**

E.G. Rodrigues, M.F.R. Pereira, Porto University/P; X. Chen, J.J. Delgado, Cadiz University, Puerto Real/E; S.A.C. Carabineiro, J.L. Figueiredo, J.J.M. Órfão, Porto University/P

17:40 **Selective hydrogenolysis of glycerol to propene**

C. Mota, V. Gonçalves, Federal University of Rio de Janeiro/BR; R. Gambetta, Embrapa Agroenergia, Brasília/BR; J. Fadigas, Braskem, São Paulo/BR

18:00 **Catalytic and DFT study of the MgO active site participating in glycerolysis reactions toward monoglycerides**

C.A. Ferretti, C.R. Apesteguía, J.I. Di Cosimo, INCAPE, Santa Fe/RA; S. Fuente, R. Ferullo, N. Castellani, Dept Physics, Bahia Blanca/RA

18:20 **Hydrogenolysis of glycerol into 1,3-propanediol over iridium-rhenium catalyst**

Y. Nakagawa, Y. Amada, K. Tomishige, Tohoku University, Sendai/J

18:40 **W-V-O bronzes, catalysts for the oxidative dehydration of glycerol into acrylic acid**

F. Cavani, S. Guidetti, C. Trevisanut, University of Bologna/I; M.D. Soriano, P. Concepción, J.M. López Nieto, Polytechnic University of Valencia/E

19:00

**Congress Dinner at the Residenz Munich** (Ticket necessary)

20:00

24:00

or

20:30

**Students Party at the Club P1** (Ticket necessary)

01:00





## LECTURE PROGRAM

## LECTURE PROGRAM

## Thursday, July 5, 2012

Room Saal 1

Chairs: F. Seitz, BASF SE, Ludwigshafen/D; F. Schüth, Max-Planck-Institut für Kohlenforschung, Mülheim/D

09:00 **PLENARY LECTURE**  
**Progress towards understanding the relationships between catalyst composition and structure and catalyst activity and selectivity**  
 A. Bell, University of California, Berkeley, CA/USA

10:00 COFFEE BREAK

Room 13 b

**Catalysis in CO<sub>2</sub> capture, sequestration and utilization** (continued)

Chairs: X.E. Verykios, University of Patras/GR; B. Rieger, Technische Universität München, Garching/D

10:20 **A diagonal approach to chemical recycling of carbon dioxide: new catalytic transformations for the reductive functionalization of CO<sub>2</sub>**  
 C. Das Neves Gomes, O. Jacquet, M. Éphritikhine, C. Villiers, P. Thuéry, T. Cantat, Atomic Energy and Alternative Energies Commission (CEA), Gif Sur Yvette/F

10:40 **Fixturing of carbon dioxide into useful products over Cu/ZnO based catalysts**  
 K.M.K. Yu, S.C.E. Tsang, Oxford University/UK

11:00 **Direct synthesis of dimethyl and diethyl carbonate from alcohols and carbon dioxide over bimetallic Cu-Ni catalysts supported on ZrO<sub>2</sub>**  
 O.F. Arbelaez, A.F. Orrego, L.F. Bustamante, A.L. Villa, University of Antioquia, Medellin/CO

11:20 **Fe-catalyzed synthesis of penta- and hexacyclic organic carbonates**  
 C.J. Whiteoak, Institute of Chemical Research of Catalonia (ICIQ), Tarragona/E; B. Gjoka, G. Licini, University of Padova/I; A.W. Kleij, Institute of Chemical Research of Catalonia (ICIQ), Tarragona/E

11:40 **CO<sub>2</sub> capture and conversion using metal-organic frameworks**  
 W. Áhn, Inha University, Incheon/ROK

12:00 LUNCH BREAK (Lunch is available for self-payment at the congress venue)

Room Saal 1

Chairs: A.T. Bell, University of California, Berkeley, CA/USA; C. Li, Dalian Institute of Chemical Physics/PRC

13:20 **AWARD LECTURE HEINZ HEINEMANN AWARD**  
**Catalysis using gold nanoparticles**  
 G. Hutchings, University of Cardiff/UK

Room Saal 11a

14:20 – 15:00 **ICCA/IEA/DECHEMA ROADMAP CATALYSIS:**  
**Petrochemical industry energy & GHG savings via catalysis – still a large opportunity**  
 R. Mills, Dow Chemical, Horgen/CH

## Thursday, July 5, 2012

Room 13 b

**Cleaning exhaust streams**

Chairs: R. Burch, Queen's University of Belfast, Northern Ireland/UK; W. Grünert, Ruhr-Universität Bochum/D

14:20 **Oxidation of fuel cell anode gas using base metal catalysts**  
 C. Ratnasamy, J.P. Wagner, G. Cullen, Süd-Chemie Inc., Louisville, KY/USA; G. Anfang, Süd-Chemie AG, Heufeld/D

14:40 **Oxygen mobility and catalytic activity in oxidation reactions of nanocrystalline high surface area hexaaluminates**  
 S. Laassiri, Université Laval, Québec/CDN; D. Duprez, S. Royer, Université de Poitiers/F; H. Alamdari, Université Laval, Québec/CDN

15:00 COFFEE BREAK

15:20 **Design of alumina-supported nanosized ceria-lanthana solid solutions for CO oxidation**  
 P. Sudarsanam, K. Lakshmi, B.M. Reddy, Indian Institute of Chemical Technology (IICT), Hyderabad/IND; M. Muhler, W. Grünert, Ruhr-Universität Bochum/D

15:40 **Room temperature oxidation of carbon monoxide on Pt/CeO<sub>2</sub>-ZrO<sub>2</sub>-Bi<sub>2</sub>O<sub>3</sub> catalysts**  
 T. Masui, H. Imadzu, K. Yasuda, N. Imanaka, Osaka University/J

Chairs: N. Kruse, Universite Libre de Bruxelles/B; A. Jentys, TU München, Garching/D

16:00 **Resolving the pathways of selective NO reduction by propene over the Co-BEA zeolite by operando IR, EPR and DFT investigations**  
 P. Pietrzyk, K. Góra-Marek, Jagiellonian University, Krakow/PL; Ch. Dujardin, P. Granger, University of Lille1/F; Z. Sojka, Jagiellonian University, Krakow/PL

16:20 **Density functional theory investigation into alkane, alkene and aromatic oxidation on platinum**  
 N. Kapur, J. Hyun, B. Shan, G. Yuan, W. Wang, X. Hao, Nanostellar Inc., Redwood City, CA/USA; K. Cho, University of Texas at Dallas, Richardson, TX/USA

16:40 **Toluene adsorption and oxidation on ZrO<sub>2</sub>-based biomass gasification gas clean-up catalysts: characterization by DRIFTS**  
 T. Viinikainen, I. Kauppi, J. Linnekoski, O. Krause, Aalto University/FIN

17:00 COFFEE BREAK

Chairs: E.E. Wolf, University of Notre Dame, IN/USA; E. Gaigneaux, Université catholique de Louvain, Louvain-la-Neuve/B

17:20 **KEYNOTE LECTURE**  
**Size effects in combustion of hydrocarbons and CO over supported metal catalysts for abatement of car exhausts**  
 V. Bukhtiyarov, Boreskov Institute of Catalysis, Novosibirsk/RUS; A. Stakheev, Zelinsky Institute of Organic Chemistry, Moscow/RUS

18:00 **A mechanistic study of mercury oxidation over SCR catalysts**  
 K. Madsen, Haldor Topsøe A/S and Technical University of Denmark, Lyngby/DK; A. Degn Jensen, F. Frandsen, Technical University of Denmark, Lyngby/DK; J. Reimer Thøgersen, Haldor Topsøe A/S, Lyngby/DK

18:20 **Novel Pt-Co/Al<sub>2</sub>O<sub>3</sub> catalyst for the selective catalytic reduction of NO<sub>x</sub> by H<sub>2</sub> in the presence of oxygen**  
 Z.M. Liu, C.H. Ni, Beijing University of Chemical Technology/PRC; L.L. Ma, Institute of High Energy Physics of the CAS, Beijing/PRC

18:40 – 19:00 **Efficient removal of emerging contaminants from wastewaters by means of catalytic wet air oxidation**  
 M. Bistan, T. Tisler, A. Pintar, National Institute of Chemistry, Ljubljana/SLO

20:00 – 24:00 **Congress Dinner at the Residenz Munich** (Ticket necessary)

or

20:30 – 01:00 **Students Party at the Club P1** (Ticket necessary)

## LECTURE PROGRAM

## LECTURE PROGRAM

## Thursday, July 5, 2012

Room Saal 1

Chairs: F. Seitz, BASF SE, Ludwigshafen/D; F. Schüth, Max-Planck-Institut für Kohlenforschung, Mülheim/D

09:00 **PLENARY LECTURE**  
**Progress towards understanding the relationships between catalyst composition and structure and catalyst activity and selectivity**  
 A. Bell, University of California, Berkeley, CA/USA

10:00 COFFEE BREAK

Room 14 a

## Fuel cell catalysis

Chairs: M. Muhler, Ruhr-Universität Bochum/D; F. Noronha, National Institute of Technology, Rio de Janeiro/BR

10:20 **Design of highly active and CO tolerant anode electrocatalysts for hydrogen PEM fuel cells**  
 D. Guban, I. Borbath, Chemical Research Center HAS, Budapest/H; F. Hirth, Kontakt Elektro kft., Pecs/H; A. Tompos, Z. Paszti, I. Sajo, Chemical Research Center HAS, Budapest/H; J.L. Margitfalvi, Combitech-Nanotech Kft, Budapest/H

10:40 **Design of highly stable dealloyed PtM<sub>3</sub> bimetallic PEM fuel cell nanoparticle catalysts**  
 F. Hasché, M. Özaslan, P. Strasser, TU Berlin/D

11:00 **Ternary electrocatalyst (PdCoP) supported on carbon for oxygen reduction reaction in polymer electrolyte membrane fuel cells**  
 D.J. You, S.-A. Jin, K.H. Lee, C. Pak, Samsung Advanced Institute of Technology, Yongin/ROK

11:20 **Pt nanoparticles supported on a new hybrid chitosan-carbon as an electrocatalyst for fuel cells**  
 B. Aghabarari, TU Isfahan/IR; M.V. Martinez-Huerta, CSIC, Madrid/E; M. Ghiaci, TU Isfahan/IR; J.L.G. Fierro, M.A. Peña, CSIC, Madrid/E

11:40 **Stabilisation of Pt nanoparticles at nanostructured carbon-metal oxide junctions**  
 Y. Wang, Pacific Northwest National Lab/Washington State University, Richland, WA/USA; Y. Shao, R. Kou, D. Mei, S. Park, H. Wan, V. Viswanathan, Pacific Northwest National Lab, Richland, WA/USA; I. Aksay, Princeton University, NJ/USA; J. Liu, Pacific Northwest National Lab, Richland, WA/USA

12:00 LUNCH BREAK (Lunch is available for self-payment at the congress venue)

Room Saal 1

Chairs: A.T. Bell, University of California, Berkeley, CA/USA; C. Li, Dalian Institute of Chemical Physics/PRC

13:20 **AWARD LECTURE HEINZ HEINEMANN AWARD**  
**Catalysis using gold nanoparticles**  
 G. Hutchings, University of Cardiff/UK

Room 14 a

## Fuel cell catalysis

Chairs: U. Ozkan, The Ohio State University, Columbus, OH/USA; A. Trovarelli, University Udine/I

14:20 **KEYNOTE LECTURE**  
**Electrocatalysis from first principles: mechanistic insights into the oxygen reduction reaction**  
 M. Neurock, University of Virginia, Charlottesville, VA/USA

15:00 COFFEE BREAK

15:20 **In situ XAFS study on the structure and behavior of core-shell Pt-M/C catalysts in fuel cells under voltage operating conditions**  
 S. Nagamatsu, The University of Electro-Communications, Chofu, Tokyo/J; T. Arai, M. Yamamoto, H. Oyanagi, A. Daimaru, Honda R&D Co., Ltd., Tochigi/J; T. Ishizaka, H. Kawanami, AIST, Tsukuba/J; T. Uruga, JASRI/SPRING-8, Harima/J; M. Tada, Institute for Molecular Science, Okazaki/J; Y. Iwasawa, The University of Electro-Communications, Chofu, Tokyo/J

15:40 **Ceria based materials for energy applications**  
 M. Boaro, M. Ferluga, A. Pappacena, C. de Leitenburg, A. Trovarelli, University of Udine/I

## Thursday, July 5, 2012

Room 14 a

## Fuel cell catalysis

Chairs: X. Bao, Dalian Institute of Chemical Physics, Dalian/PRC; C.G. Vayenas, University of Patras/GR

16:00 **SOFC anodes based on CuNi-CeO<sub>2</sub> for direct oxidation of methane**  
 A. Hornés, ICP-CSIC, Madrid/E; M.J. Escudero, L. Daza, CIEMAT, Madrid/E; M. Fernández-García, ICPCSIC, Madrid/E; A. Guerrero-Ruiz, UNED, Madrid/E; A. Martínez-Arias, ICP-CSIC, Madrid/E

16:20 **The effect of nickel content on the performance of nickel/gadolinium doped ceria as anodes for ethanol-powered solid oxide fuel cell**  
 B. Augusto, Fluminense Federal University, Niterói/BR; L. da Costa, National Institute of Technology, Rio de Janeiro/BR; F. Fonseca, F. Tabuti, Instituto de Pesquisas Energéticas e Nucleares, São Paulo/BR; E. Noronha, National Institute of Technology, Rio de Janeiro/BR; R. Colman, L. Mattos, Fluminense Federal University, Niterói/BR

16:40 **Synergistic effect of sulfur to non-precious Fe-nitrogen-carbon based catalysts for oxygen reduction reaction**  
 C. Pak, J.K. Shon, S.-A. Jin, D.J. You, Samsung Advanced Institute of Technology, Yongin/ROK; J.M. Kim, Sungkyunkwan University, Suwon/ROK; J.-W. Lee, Korea Institute of Energy Research, Daejeon/ROK

17:00 COFFEE BREAK

Room 14 a

## Novel concepts in acid-base catalysis

Chairs: J.A. van Bokhoven, ETH Zürich/CH; A. Stepanov, Boreskov Institute of Catalysis, Novosibirsk/RUS

17:20 **Heterogenization ability and catalytic performance of W-heteropolyacid Cs-salts as a function of central atom in polyanion**  
 D. Olvovsky, M.V. Landau, M. Herskowitz, O. Snir, A. Neyman, I.A. Weinstock, Ben-Gurion University of the Negev, Beer-Sheva/IL

17:40 **Consequences of acid strength and confinement for reactivity and selectivity on solid acids**  
 R.T. Carr, University of California at Berkeley, CA/USA; M. Neurock, University of Virginia, Charlottesville, VA/USA; E. Iglesia, University of California at Berkeley, CA/USA

18:00 **Functionalised tungsten carbides catalyst to apply in the cellulose transformation**  
 C. Rodella B., A. Leitão A., N. Silva C. B., Brazilian Synchrotron Light Source (LNLS), Campinas/BR; S. Moya F., IQ USP, São Carlos/BR; V. Teixeira S., NUCAT-COPPE-UFRJ, Rio de Janeiro/BR

18:20 **Dependence of the cracking activity upon the solid acidity of zeolite**  
 M. Niwa, Nagoya Industrial Science Research Institute, Nagakute/J; K. Suzuki, Tottori University/J; G. Sastre, Universidad Politecnica de Valencia/E; K. Okumura, N. Katada, Tottori University/J

18:40 **Tuning of acid and redox properties of hierarchical meso-macroporous Nb doped titania for n-butanol catalytic oxidation**  
 M. Franco Finol, J.-M. Giraudon, University Lille 1, Villeneuve d'Ascq/F; S. Siffert, University of Littoral, Dunkerque/F; J. Rooke, B.-L. Su, Facultés Notre Dame de la Paix, Namur/B; M. Marzo, A. Gervasini, University of Milan/I; J.F. Lamonier, University Lille 1, Villeneuve d'Ascq/F

20:00 **Congress Dinner at the Residenz Munich** (Ticket necessary)

24:00

or

20:30 **Students Party at the Club P1** (Ticket necessary)

01:00

## LECTURE PROGRAM

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## Thursday, July 5, 2012

Room Saal 1

Chairs: F. Seitz, BASF SE, Ludwigshafen/D; F. Schüth, Max-Planck-Institut für Kohlenforschung, Mülheim/D

09:00 **PLENARY LECTURE**  
**Progress towards understanding the relationships between catalyst composition and structure and catalyst activity and selectivity**  
 A. Bell, University of California, Berkeley, CA/USA

10:00 COFFEE BREAK

Room 14 c

**Cross-disciplinary workshop organocatalysis / biocatalysis**

Chairs: A. Jacobi von Wangelin, Universität Regensburg/D; U. Kragl, Universität Rostock/D

10:20 **INVITED LECTURE**  
**A quantitative approach to nucleophilic organocatalysis**  
 S. Lakhdar, B. Maji, A.R. Ofial, H. Mayr, Universität München/D

11:00 **Microporous polymer networks as highly selective heterogeneous asymmetric organocatalysts**  
 J. Schmidt, D.S. Kundu, C. Bleschke, S. Blechert, A. Thomas, TU Berlin/D

11:20 **A new strategy in asymmetric catalytic reaction: emulsion catalysis**  
 Q. Gao, Y. Liu, C. Li, Dalian Institute of Chemical Physics/PRC

11:40 **Organochiral Vis-light photocatalysis with porphyrin PMO materials**  
 S.-E. Park, E.-Y. Jeong, Inha University, Incheon/ROK

12:00 LUNCH BREAK (Lunch is available for self-payment at the congress venue)

Room Saal 1

Chairs: A.T. Bell, University of California, Berkeley, CA/USA; C. Li, Dalian Institute of Chemical Physics/PRC

13:20 **AWARD LECTURE HEINZ HEINEMANN AWARD**  
**Catalysis using gold nanoparticles**  
 G. Hutchings, University of Cardiff/UK

Room 14 c

**Cross-disciplinary workshop organocatalysis / biocatalysis**

Chairs: A. Jacobi von Wangelin, Universität Regensburg/D; U. Kragl, Universität Rostock/D

14:20 **KEYNOTE LECTURE**  
**Directed evolution of selective enzymes: a prolific source of catalysts for organic chemistry and biotechnology**  
 M.T. Reetz, Universität Marburg/D

15:00 COFFEE BREAK

15:20 **Synergistic effects in energy-efficient organocatalysed formation of organic carbonates**  
 C.J. Whiteoak, A.W. Kleij, Institute of Chemical Research of Catalonia (ICIQ), Tarragona/E

15:40 **Bifunctional phosphonium salt catalyzed addition of carbon dioxide to epoxides**  
 T. Werner, H. Büttner, Leibniz-Institute for Catalysis, Rostock/D

16:00 **Covalent triazine frameworks as metal-free heterogeneous catalysts for the activation and conversion of CO<sub>2</sub>**  
 J. Roeser, K. Kailasam, A. Thomas, TU Berlin/D

16:20 **INVITED LECTURE**  
**About the asymmetric functionalisation of carbonyls after the advent of cinchona-based primary amine catalysis**

P. Melchiorre, Institute of Chemical Research of Catalonia (ICIQ), Tarragona/E

17:00 COFFEE BREAK

## Thursday, July 5, 2012

Room 14 c

**Cross-disciplinary workshop organocatalysis / biocatalysis**

Chairs: A. Jacobi von Wangelin, Universität Regensburg/D; U. Kragl, Universität Rostock/D

17:20 **Paramagnetic epoxy-functionalised mesostructured cellular foams for immobilisation of penicillin G acylase**  
 L. Yang, Z.Y. Gao, Y.L. Guo, W.C. Zhan, G.Z. Lu, East China University of Science and Technology, Shanghai/PRC

17:40 **Application and scope of fully organic photoredox catalysis in single electron transfer reactions**  
 B. López-Sánchez, K. Zeitler, Regensburg University/D

18:00 **Design approach and new insights in support-catalyst interactions in single-site heterogeneous organocatalysts**  
 D. Xuereb, R. Raja, University of Southampton/UK

20:00 **Congress Dinner at the Residenz Munich** (Ticket necessary)

24:00

or

20:30 **Students Party at the Club P1** (Ticket necessary)

01:00

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## LECTURE PROGRAM

## LECTURE PROGRAM

## Friday, July 6, 2012

## Room Saal 1

Chairs: J.-M. Basset, King Abdullah University of Science and Technology, Thuwal/SA; L.F. Gladden, University of Cambridge/UK

- 09:00 **PLENARY LECTURE**  
**Design and study of molecular catalysts for small molecule activation and conversion**  
 R. Periana, The Scripps Research Institute, Jupiter, FL/USA
- 10:00 COFFEE BREAK

## Room 13 a

## Selective oxidation

Chairs: R.K. Grasselli, Technische Universität München, Garching/D; J.-M.M. Millet, CNRS-UCBL, Villeurbanne/F

- 10:20 **Oxidation reactions on oxide supported Au catalysts – the crucial role of reaction conditions and catalyst support**  
 R.J. Behm, Ulm University/D
- 10:40 **In-situ structure analysis of gold nanoparticulate catalysts during CO oxidation**  
 S. Takeda, H. Yoshida, Y. Kuwauchi, T. Uchiyama, Osaka University/J; T. Akita, K. Sun, S. Tanaka, M. Kohyama, AIST, Osaka/J; S. Shimada, M. Haruta, Tokyo Metropolitan University/J
- 11:00 **Probing the active site of propene hydrogenation in the direct propene epoxidation over gold-titania catalysts**  
 J. Chen, V. Ordomskiy, J.C. Schouten, T.A. Nijhuis, Eindhoven University of Technology/NL
- 11:20 **Role of Ti oxo-Au interface in selective oxidation of propane**  
 N.A. Mashayekhi, M.C. Kung, H.H. Kung, Northwestern University, Evanston, IL/USA
- 11:40 **Gas phase epoxidation of propylene over Au/TS-1 catalysts**  
 W. Lee, M. Akatay, Purdue University, West Lafayette, IN/USA; E. Stach, Brookhaven National Laboratory, Upton, NY/USA; F. Ribeiro, W. Delgass, Purdue University, West Lafayette, IN/USA
- 12:00 LUNCH BREAK (Lunch is available for self-payment at the congress venue)
- Chairs: J.M. Lopez Nieto, Universidad Politecnica de Valencia/E; J. Vadrine, Universite Pierre et Marie Curie, Ivry sur Seine/F
- 13:20 **The role of radicals during catalytic epoxidation**  
 U. Neuenschwander, I. Hermans, ETH Zurich/CH
- 13:40 **Turning a priori unwanted catalysts modifications as a way to improve their performance**  
 E. Arendt, E.M. Gaigneaux, Université catholique de Louvain, Louvain-la-Neuve/B
- 14:00 **Catalytic relevant oxygen species on silver: effects on the mesoscopic length scale and contribution of bulk oxygen diffusion to the surface**  
 S. Günther, TU München, Garching/D; M.A. Nino, T.O. Montes, A. Locatelli, Sincrotrone Trieste SCpA/I; S. Böcklein, J. Wintterlin, Universität München/D
- 14:20 **Effect of acidity of supported (NH<sub>4</sub>)<sub>3</sub>HPMo<sub>11</sub>VO<sub>40</sub> catalysts on their performances in the selective oxidation of isobutane**  
 F. Jing, B. Katryniok, E. Bordes-Richard, S. Paul, Ecole Centrale de Lille, Villeneuve d'Ascq/F
- 14:40 **High performance nanostructured catalysts of metallic molybdates for selective oxidation of propene by air**  
 L. Wang, N.H. Xue, X.F. Guo, W.M. Yang, W.P. Ding, Y. Chen, Nanjing University/PRC
- 15:00 COFFEE BREAK
- Chairs: W. Ueda, Hokkaido University/J; V. Cortes Corberan, C.S.I.C., Madrid/E
- 15:20 **Nitrogen-doped carbon nanotubes as a highly active metal-free catalyst for selective oxidation**  
 K. Chizari, A. Deneuve, Y. Liu, I. Janowska, D. Begin, M.J. Ledoux, C. Pham-Huu, CNRS-ECPM-University of Strasbourg/F; I. Florea, O. Ersen, CNRS-University of Strasbourg/F
- 15:40 **Synthesis of Mo, W based complex metal oxide catalyst by hydrothermal method**  
 T. Murayama, K. Omata, N. Kuramata, Y. Goto, J. Hirata, M. Ando, S. Izumi, W. Ueda, Hokkaido University, Sapporo/J

## Room Saal 1

- 16:00 **Closing ceremony**  
 16:15

## Friday, July 6, 2012

## Room Saal 1

Chairs: J.-M. Basset, King Abdullah University of Science and Technology, Thuwal/SA; L.F. Gladden, University of Cambridge/UK

- 09:00 **PLENARY LECTURE**  
**Design and study of molecular catalysts for small molecule activation and conversion**  
 R. Periana, The Scripps Research Institute, Jupiter, FL/USA
- 10:00 COFFEE BREAK

## Room 13 b

## From mechanistic insides to advances in reactor technology

Chairs: P. Barger, UOP Research Center - A Honeywell Company, Des Plaines, IL/USA

- 10:20 **Compact multichannel reactor for single and tandem reactions**  
 S.K. Sharma, P.K. Plucinski, J.M.J. Williams, University of Bath/UK
- 10:40 **Combined kinetic and spectroscopic profiling of catalytic packed bed reactors**  
 R. Horn, M. Geske, O. Korup, Fritz-Haber-Institute, Berlin/D
- 11:00 **Design of flow process for heterogeneous Pd-catalyzed coupling reactions**  
 K. Loponov, A. Lapkin, Warwick University, Coventry/UK; J. Stevens, C. Barnard, Johnson Matthey, Reading/UK
- 11:20 **Heterogenisation of homogeneous catalytic processes by Supported Ionic Liquid Phase (SILP) catalysis: a new viable technology for industry**  
 A. Riisager, C.W. Hanning, H. Kolding, R. Fehrmann, Technical University of Denmark, Kgs. Lyngby/DK
- 11:40 **Partial hydrogenation of 2-butyne-1,4-diol in continuous flow mode using microreactor technology**  
 T. Rehm, R. Zapf, P. Löb, Institut für Mikrotechnik Mainz GmbH/D; L. Kiwi-Minsker, C. Berguerand, EPFL, Lausanne/CH; S. Ek, Picosun Oy, Espoo/FIN
- 12:00 LUNCH BREAK (Lunch is available for self-payment at the congress venue)
- Chairs: G. Haller, Yale Universtiy, New Haven, CT/USA; L. Mleczko, Bayer Technology Services GmbH, Leverkusen/D
- 13:20 **KEYNOTE LECTURE**  
**Microkinetics of hydrocarbon oxidation reactions**  
 G.B. Marin, University of Ghent/B
- 14:00 **CNF based structured catalyst: stability and performance**  
 J. K. Chinthaginjala, D.B. Thakur, S. Pacheco Benito, K. Seshan, L. Lefferts, University of Twente, Enschede/NL
- 14:20 **Free-standing TiO<sub>2</sub> nanotube array membranes as nano-confined reactors**  
 R. Passalacqua, C. Ampelli, S. Perathoner, G. Centi, University of Messina and INSTM/CASPE/I
- 14:40 **Characterisation of geometry and heat transfer properties of metal foams for intensification of catalytic processes**  
 E. Bianchi, Politecnico di Milano/I; T. Heidig, MPI Institute for Dynamics of Complex Technical Systems, Magdeburg/D; C.G. Visconti, G. Groppi, Politecnico di Milano/I; H. Freund, MPI Institute for Dynamics of Complex Technical Systems, Magdeburg/D; E. Tronconi, Politecnico di Milano/I
- 15:00 COFFEE BREAK
- Chairs: I. Ivanova, A.V. Topchiev Institute of Petrochemical Synthesis, RAS, Moscow/RUS; J. Hargreaves, University of Glasgow, Scotland/UK
- 15:20 **Toluene methylation in hierarchical ZSM5**  
 J.H. Ahn, R. Kolvenbach, A. Jentys, TU München, Garching/D; M. Ba-Shammakh, A. Al-Shammari, N. Al-Yassir, S. Al-Khattaf, KingFahd University, Dhahran/SAR
- 15:40 **Heterogeneous hydrogenation reaction mechanism evaluation and NMR imaging of catalytic hydrogenation by using parahydrogen**  
 K. Kovtunov, V. Zhivonitko, D. Barskiy, International Tomography Center SB RAS, Novosibirsk/RUS; I. Beck, V. Bukhtiyarov, Borekov Institute of Catalysis SB RAS, Novosibirsk/RUS; I. Koptuyug, International Tomography Center SB RAS, Novosibirsk/RUS

## Room Saal 1

- 16:00 **Closing ceremony**  
 16:15

## LECTURE PROGRAM

## LECTURE PROGRAM

## Friday, July 6, 2012

Room Saal 1

Chairs: J.-M. Basset, King Abdullah University of Science and Technology, Thuwal/SA; L.F. Gladden, University of Cambridge/UK

09:00 **PLENARY LECTURE**  
**Design and study of molecular catalysts for small molecule activation and conversion**

R. Periana, The Scripps Research Institute, Jupiter, FL/USA

10:00 COFFEE BREAK

Room 14 a

**Catalysts for clean fuels production**

Chairs: L.A. Petrov, King Abdulaziz University, Jeddah/SA; M. Daage, ExxonMobil Research and Engineering Company, Annandale, NJ/USA

10:20 **Control of the concentration of single Al atoms and Al-O-(Si-O)<sub>2</sub>-Al sequences in one ring in ZSM-5. Effect of synthesis parameters**

J. Dedecek, B. Wichterlova, V. Pashkova, Z. Sobalik, J. Heyrovsky Institute of Physical Chemistry of ASCR, Prague/CZ

10:40 **Distribution, strength and dealumination behavior of acid sites in nanostructured MFI zeolites and its catalytic consequences**

M. Choi, K. Kim, R. Ryoo, KAIST, Daejeon/ROK

11:00 **Organotemplate-free and seed-directed route for synthesizing zeolite catalysts with highly active properties**

H.Y. Zhang, B. Xie, Jilin University, Changchun/PRC; X.J. Meng, F.-S. Xiao, Zhejiang University, Hangzhou/PRC

11:20 **Small alkane activation on Zn and Ga-modified zeolite BEA studied by H/D hydrogen exchange monitoring with solid-state NMR in situ**

A.G. Stepanov, A.A. Gabrienko, S.S. Arzumanov, Boreskov Institute of Catalysis, Novosibirsk/RUS; D. Freude, U. Haase, University of Leipzig/D

11:40 **A delicate balance: the effect of olefins on n-butane isomerization**

M.J. Wulfers, F.C. Jentoft, University of Oklahoma, Norman, OK/USA

12:00 LUNCH BREAK (Lunch is available for self-payment at the congress venue)

Chairs: F. Fajula, Ecole Nationale Supérieure de Chimie, Montpellier/F; R. Saxton, Chevron Texaco Energy Research and Technology Company, Richmond, CA/USA

13:20 **Synthesis of silica-alumina with tunable acidity by flame spray pyrolysis**

J. Huang, The University of Sydney/AUS; Y. Jiang, N. van Vegten, ETH Zurich/CH; M. Hunger, University of Stuttgart/D; A. Baiker, ETH Zurich/CH

13:40 **Atomic-scale microscopic and spectroscopic characterization of zeolite- and MgO-supported molecular iridium complex and cluster catalysts**

C. Aydin, J. Lu, N.D. Browning, University of California, Davis, CA/USA; A.J. Liang, C.-Y. Chen, Chevron Energy Technology Co., Richmond, CA/USA; B.C. Gates, University of California, Davis, CA/USA

14:00 **Direct observation of reconstructed surface termination by electron microscopy**

Y. Zhu, Q. Wang, L. Zhao, Y. Han, King Abdullah University of Science and Technology (KAUST), Thuwal/SAR; W. Lu, Zhejiang University, Hangzhou/PRC

14:20 **Multi-technique synchrotron-based approach reveals insight into cracking catalyst deactivation at the single particle level**

J. Ruiz-Martinez, A.M. Beale, M.G. O'Brien, B.M. Weckhuysen, Utrecht University/NL; P.D. Quinn, J.F.W. Mosselmans, Diamond Light Source, Didcot/UK

14:40 **Behavior of Pt clusters during reduction treatments at elevated temperatures, characterized by aberration-corrected STEM imaging and EXAFS**

S.A. Bradley, S.R. Bare, S.D. Kelly, S.I. Sanchez, W. Sinkler, UOP - A Honeywell Company, Des Plaines, IL/USA; L.F. Allard, Oak Ridge National Laboratory, TN/USA

15:00 COFFEE BREAK

## Friday, July 6, 2012

Room 14 a

**Catalysts for clean fuels production**

Chairs: G.B. Marin, Ghent University/B

15:20 **In situ MAS NMR for investigation of reaction mechanism and reaction kinetics of methanol conversion**

S.T. Xu, Y.X. Wei, J.Z. Li, Dalian Institute of Chemical Physics/PRC; A.M. Zheng, Wuhan Institute of Physics and Mathematics/PRC; J.R. Chen, P. Tian, Y. Zhou, W.P. Zhang, X.W. Han, X.H. Bao, Z.M. Liu, Dalian Institute of Chemical Physics/PRC

15:40 **Imaging of molecular adsorption on MoS<sub>2</sub> and CoMoS hydrotreating model catalysts**

J.V. Lauritsen, A.K. Tuxen, H.G. Führtbauer, F. Besenbacher, Aarhus University/DK; K.G. Knudsen, H. Topsøe, Haldor Topsøe, Kongens Lyngby/DK

Room Saal 1

16:00

16:15

**Closing ceremony**

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## LECTURE PROGRAM

## POSTER SYMPOSIA

## Friday, July 6, 2012

## Room Saal 1

Chairs: J.-M. Basset, King Abdullah University of Science and Technology, Thuwal/SA; L.F. Gladden, University of Cambridge/UK

09:00 **PLENARY LECTURE**  
**Design and study of molecular catalysts for small molecule activation and conversion**  
R. Periana, The Scripps Research Institute, Jupiter, FL/USA

10:00 COFFEE BREAK

## Room 14 c

## Green synthesis (continued)

Chairs: V.I. Parvulescu, University of Bucharest/RO; J. Armor, GlobalCatalysis.com L.L.C., Orefield, PA/USA

10:20 **KEYNOTE LECTURE**  
**What's really happening inside a catalyst pore?**  
L.F. Gladden, University of Cambridge/UK

11:00 **Metal incorporated mesoporous silicas as heterogeneous catalyst for olefin epoxidation**  
A. Ramanathan, M. Ghanta, B. Subramaniam, University of Kansas, Lawrence, KS/USA

11:20 **Catalytic epoxidation of organic compounds over peroxophosphotungstate entrapped in mesoporous SBA-15**  
E. Poli, F. Jerome, J.-M. Calcens, Y. Pouilloux, Poitiers University/F

11:40 **Efficiently asymmetric epoxidation of olefins with chiral bioinspired catalysts**  
W. Sun, B. Wang, M. Wu, C.X. Miao, S.F. Wang, C.G. Xia, Lanzhou Institute of Chemical Physics/PRC

12:00 LUNCH BREAK (Lunch is available for self-payment at the congress venue)

Chairs: W. Leitner, RWTH Aachen/D; R. Fehrmann, Technical University of Denmark, Kg. Lyngby/DK

13:20 **AuPd and AuPt alloy supported nanocrystals for polyol oxidations**  
P. Miedziak, Cardiff Catalysis Institute/UK; G.L. Brett, T. Kotionova, Y. Ryabenkova, University of Cardiff/UK; Q. He, Lehigh University, Bethlehem, PA/USA; N. Dimitratos, University of Cardiff/UK; C.J. Kiely, Lehigh University, Bethlehem, PA/USA; D.W. Knight, S.H. Taylor, G.J. Hutchings, University of Cardiff/UK

13:40 **Driving selective oxidation of aromatic alcohols with sunlight using photocatalysts of gold and palladium alloy nanoparticles**  
S. Sarina, E. Jaatinen, H.Y. Zhu, Queensland University of Technology, Brisbane/AUS

14:00 **Laccase immobilization on metal oxides for enzyme-catalysed oxidations**  
R. Mateos Blanco, F. Naveau, M.E. Gaigneaux, E. Enaud, Université catholique de Louvain, Louvain la Neuve/B

14:20 **Controlled gas phase hydrogenation of m-dinitrobenzene: a comparison of the catalytic action of carbon supported gold and silver**  
F. Cárdenas-Lizana, L. Kiwi-Minsker, École Polytechnique Fédérale de Lausanne/CH; S. Gómez-Quero, University of Amsterdam/NL; Z. M. De Pedro, Autonomous University of Madrid/E; M.A. Keane, Heriot-Watt University, Edinburgh/UK

14:40 **Methylated cyclodextrin-stabilised Ruthenium(0) nanoparticles as active scaffolds for catalytic hydrogenation**  
B. Léger, R. Herbois, S. Noel, University of Artois, Lens/F; A. Roucoux, ENSC Rennes/F; E. Monflier, A. Ponchel, University of Artois, Lens/F

15:00 COFFEE BREAK

Chairs: B. Subramaniam, The University of Kansas, Lawrence, KS/USA; V. Teixeira da Silva, Federal University of Rio de Janeiro/BR

15:20 **Synthesis of sulfonated diphosphines-stabilized ruthenium nanoparticles: efficient nanocatalysts in hydrogenation reactions in biphasic media**  
M. Guerrero Hernandez, K. Philippot, K. Fajenweg, Centre National de la Recherche Scientifique, Toulouse/F; E. Monflier, H. Bricout, Université d'Artois, Lens/F; A. Roucoux, A. Nowicki, ENS Chimie de Rennes/F

15:40 **Hydroxyapatite hosting niobium: a new class of amphoteric catalysts for carbohydrate transformation reactions**  
P. Carniti, A. Gervasini, M. Marzo, University of Milan/I

## Room Saal 1

16:00 **Closing ceremony**  
16:15

## ICC 2012 – POSTER SYMPOSIA

At the 15<sup>th</sup> International Congress on Catalysis (ICC 2012) we explore a new form of communication for more specialized topics.

Approximately 10 contributions selected as posters have been grouped to a thematic cluster in which participants interested in the topic can exchange and can share this with other participants. Selected posters are marked with the number of the poster symposia, e.g. PS.07 in the separate brochure "Poster Program".

No	Symposia name	Day	Time	Room
<b>PS.01</b>	<b>Structure activity relations in FT processes</b> Chairs: E. Van Steen, University of Cape Town/ZA; A. Holmen, Norwegian Institute of Technology, Trondheim/N	Monday, July 2	10:50 – 12:30	11a
<b>PS.02</b>	<b>Oxidative de-hydrogenation</b> Chairs: A. Lemonidou, Aristotle University of Thessaloniki/GR; V. Cortes Corberan, C.S.I.C., Madrid/E	Monday, July 2	10:50 – 12:30	11b
<b>PS.03</b>	<b>Friedel crafts and alkane alkylation</b> Chairs: S.E. Park, Inha University, Incheon/KR; G. Mul, University of Twente, Enschede/NL	Monday, July 2	10:50 – 12:30	12a
<b>PS.04</b>	<b>Epoxidation with Ti silicates</b> Chairs: F. Bonino, University of Turin/I F.S. Xiao, Zhengjiang University, Hangzhou/PRC	Monday, July 2	10:50 – 12:30	12b
<b>PS.05</b>	<b>Hydrotreating catalysts: new solutions to old challenges</b> Chairs: K. Smith, University of British Columbia, Vancouver/CA; A. Kuperman, Chevron Energy Research and Technology Company, Richmond, CA/USA	Monday, July 2	15:50 – 17:30	11a
<b>PS.06</b>	<b>Methanol and direct DME synthesis</b> Chairs: M. Behrens, Fritz-Haber-Institut der MPG, Berlin/D; D. Jackson, University of Glasgow/UK	Monday, July 2	15:50 – 17:30	11b
<b>PS.07</b>	<b>Selective alcohol oxidation</b> Chairs: I. Hermans, ETH Zurich/CH; Y. Wang, Pacific Northwest National Laboratory, Richland, WA/USA	Monday, July 2	15:50 – 17:30	12a
<b>PS.08</b>	<b>Novel aspects of NO<sub>x</sub> reduction (with NH<sub>3</sub>)</b> Chairs: G. Fuentes, Universidad Autonoma Metropolitana – Iztapalapa, Mexico D.F./MX; E. Tronconi, Politecnico di Milano/I	Monday, July 2	15:50 – 17:30	12b
<b>PS.09</b>	<b>Refoming of hydrocarbons to syngas</b> Chairs: V. Sadykov, Boreskov Institute of Catalysis, Novosibirsk/RUS; F. Ribeiro, Purdue University, West Lafayette, IN/USA	Monday, July 2	17:50 – 19:30	11a
<b>PS.10</b>	<b>BTX selective oxidation</b> Chairs: R. Gläser, Universität Leipzig/D; M. Stockenhuber, University of Newcastle, Callaghan/AUS	Monday, July 2	17:50 – 19:30	11b
<b>PS.11</b>	<b>Versatil TiO<sub>2</sub>-based photocatalysts</b> Chairs: J. Strunk, Ruhr-Universität Bochum/D; J. Schwank, University of Michigan, Ann Arbor, MI/USA	Monday, July 2	17:50 – 19:30	12a

## POSTER SYMPOSIA

No	Symposia name	Day	Time	Room
<b>PS.12</b>	<b>Towards understanding sulfide catalysts</b> Chairs: R. Prins, ETH Zürich/CH; E. Payen, University of Sciences and Technologies of Lille/F	Monday, July 2	17:50 – 19:30	12b
<b>PS.13</b>	<b>Manipulating product distribution in FT processes</b> Chairs: M. Schmal, Federal University of Rio de Janeiro/BR; J.W. Niemantsverdriet, Eindhoven University/NL	Tuesday, July 3	10:20 – 12:00	11a
<b>PS.14</b>	<b>Methanol to olefins</b> Chairs: U. Olsbye, University of Oslo/N; E. Hensen, Eindhoven University of Technology/NL	Tuesday, July 3	10:20 – 12:00	11b
<b>PS.15</b>	<b>Imaging/local probes for catalyst characterization</b> Chairs: U. Heiz, TU München/D; M.J. Bowker, Cardiff University/UK	Tuesday, July 3	10:20 – 12:00	12a
<b>PS.16</b>	<b>Heteropolyacids</b> Chairs: I. Kozhevnikov, University of Liverpool/UK; M. Landau, Ben-Gurion University of the Negev, Beer-Sheva/IL	Tuesday, July 3	10:20 – 12:00	12b
<b>PS.17</b>	<b>Catalyst immobilization and flow systems</b> Chairs: D.J. Cole-Hamilton, University of St. Andrews/UK; W. Leitner, RWTH Aachen/D	Tuesday, July 3	17:20 – 19:00	11a
<b>PS.18</b>	<b>Mechanistic aspects of the water-gas shift reaction</b> Chairs: L. Lefferts, University of Twente, Enschede/NL; E. Lombardo, Universidad Nacional del Litoral, Santa Fe/AR	Tuesday, July 3	17:20 – 19:00	11b
<b>PS.19</b>	<b>CC-coupling/cleavage</b> Chairs: A. Jacobi von Wangelin, Universität Regensburg/D; T. Zhang, Chinese Academy of Sciences, Dalian/PRC	Tuesday, July 3	17:20 – 19:00	12a
<b>PS.20</b>	<b>Catalysis in fuel cells</b> Chairs: C. Pak, Samsung Advanced Institute of Technology, Yongin/KR; K. Eguchi, Kyoto University/J	Tuesday, July 3	17:20 – 19:00	12b
<b>PS.21</b>	<b>Physicochemical effects influencing cracking</b> Chairs: R.F. Lobo, University of Delaware, Newark, DE/USA; M. Niwa, Tottori University, Nagakute/J	Wednesday, July 4	10:20 – 12:00	11a
<b>PS.22</b>	<b>Metathesis reactions</b> Chairs: A. Trunschke, Fritz-Haber-Institut der MPG, Berlin/D; NN	Wednesday, July 4	10:20 – 12:00	11b
<b>PS.23</b>	<b>Chemoselective hydrogenation</b> Chairs: A. Kogelbauer, Imperial College London/UK; G.-K. Chuah, National University Singapore/SGP	Wednesday, July 4	10:20 – 12:00	12a
<b>PS.24</b>	<b>Degradation of pollutants through photocatalysis</b> Chairs: V. Keller, University of Strasbourg/F; P. Sermon, Brunel University, Uxbridge/UK	Wednesday, July 4	10:20 – 12:00	12b
<b>PS.25</b>	<b>Hydrocracking and hydroisomerization</b> Chairs: A. Borgna, Institute of Chemical and Engineering Sciences, Singapore/SGP; Z. Sobalik, J. Heyrovsky Institute of Physical Chemistry of ASCR, Prague/CZ	Wednesday, July 4	13:20 – 15:00	11a

## POSTER SYMPOSIA

No	Symposia name	Day	Time	Room
<b>PS.26</b>	<b>Hydroformylation and other reactions involving CO addition</b> Chairs: P. Wasserscheid, Universität Erlangen-Nürnberg/D; M. Cokoja, TU München/D	Wednesday, July 4	13:20 – 15:00	11b
<b>PS.27</b>	<b>Enantioselective catalysis</b> Chairs: E. Pires, Universidad de Zaragoza/E S. Jaenicke, National University of Singapore/SGP	Wednesday, July 4	13:20 – 15:00	12a
<b>PS.28</b>	<b>Novel photocatalysts for hydrogen generation</b> Chairs: M. Wark, Ruhr Universität Bochum/D; S. Perathoner, University of Messina/I	Wednesday, July 4	13:20 – 15:00	12b
<b>PS.29</b>	<b>Ruthenium Dioxide, a versatile oxidation catalyst in heterogeneous and electro-catalysis</b> Chairs: H. Over, Universität Gießen/D; M. Muhler, Ruhr-Universität Bochum/D	Wednesday, July 4	17:20 – 19:00	11a
<b>PS.30</b>	<b>Chemistry of alcohols</b> Chairs: R. Davis, University of Virginia, Charlottesville, VA/USA; C. Sievers, Georgia Institute of Technology, Atlanta, GA/USA	Wednesday, July 4	17:20 – 19:00	11b

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## POSTER SYMPOSIA

No	Symposia name	Day	Time	Room
<b>PS.31</b>	<b>Synchrotron methods for catalyst characterization</b> Chairs: S. Bare, UOP LLC a Honeywell Company, Des Plaines, IL/USA; B.M. Weckhuysen, University Utrecht/NL	Wednesday, July 4	17:20 – 19:00	12a
<b>PS.32</b>	<b>Tailored Au and Au alloy particles</b> Chairs: C. Louis, Université Pierre et Marie Curie – UPMC, Paris/F NN	Wednesday, July 4	17:20 – 19:00	12b
<b>PS.33</b>	<b>Metal organic frameworks</b> Chairs: M. Hartmann, Universität Erlangen-Nürnberg/D; D. Farrusseng, IRCELYON-CNRS, Villeurbanne/F	Thursday, July 5	10:20 – 12:00	11a
<b>PS.34</b>	<b>Conversion of triglyceride and fatty acids to fuels</b> Chairs: V. Teixeira da Silva, Federal University of Rio de Janeiro/BR; D.E. Resasco, University of Oklahoma, Norman, OK/USA	Thursday, July 5	10:20 – 12:00	11b
<b>PS.35</b>	<b>First principles based modeling</b> Chairs: K. Reuter, TU München/D; S. Lincic, University of Michigan, Ann Arbor, MI/USA	Thursday, July 5	10:20 – 12:00	12a
<b>PS.36</b>	<b>Advanced characterization using NMR</b> Chairs: J. Dedecek, Jaroslav Heyrovsky Institute of Physical Chemistry, Prague/CZ; L.F. Gladden, University of Cambridge/UK	Thursday, July 5	10:20 – 12:00	12b
<b>PS.37</b>	<b>Conversion of lignocellulosic biomass to fuels and chemicals</b> Chairs: H. Liu, Peking University/PRC; F. Jentoft, University of Oklahoma, Norman, OK/USA	Thursday, July 5	15:20 – 17:00	11a
<b>PS.38</b>	<b>Lignin depolymerization and conversion of lignin model compounds</b> Chairs: R. Palkovits, RWTH Aachen/D; D. Murzin, Åbo Akademi University, Turku/FIN	Thursday, July 5	15:20 – 17:00	11b
<b>PS.39</b>	<b>Selective hydrogenation of CO<sub>2</sub></b> Chairs: M. Landau, Ben-Gurion University of the Negev, Beer-Sheva/IL; K. Köhler, TU München, Garching/D	Thursday, July 5	15:20 – 17:00	12a
<b>PS.40</b>	<b>In situ methods for characterizing catalyst and reactions</b> Chairs: E.E. Wolf, University of Notre Dame, IN/USA; C. Peden, Pacific Northwest National Laboratory, Richland, WA/USA	Thursday, July 5	15:20 – 17:00	12b
<b>PS.41</b>	<b>Steam reforming of alcohols</b> Chairs: C. Chin, University of Toronto/CDN; K. Seshan, University Twente, Enschede/NL	Thursday, July 5	17:20 – 19:00	11a
<b>PS.42</b>	<b>Synthesis of organic carbonates</b> Chairs: T.E. Müller, RWTH Aachen/D; B. Rieger, TU München/D	Thursday, July 5	17:20 – 19:00	11b
<b>PS.43</b>	<b>Advances in electron-microscopy</b> Chairs: I. Arslan, Pacific Northwest National Laboratory, Richland, WA/USA; A. Datye, University of New Mexico, Albuquerque, NM/USA	Thursday, July 5	17:20 – 19:00	12a
<b>PS.44</b>	<b>Selective methane oxidation</b> Chairs: H.H. Kung, Northwestern University, Evanston, IL/USA; NN	Thursday, July 5	17:20 – 19:00	12b

## POSTER PROGRAM

## POSTER PROGRAM

(see separate brochure)

Total is proud to sponsor the Poster Sessions at the 15<sup>th</sup> ICC in Munich, bringing together prominent researchers from the industry and the university communities to focus on the current developments and challenges in catalysis.



# TOTAL

## POSTER SESSIONS

The opportunities for poster authors to present their posters and to discuss with colleagues are

- **Poster Session on Tuesday**, July 3, 2012, for posters with even numbers from 3 p.m. till 5:20 p.m.
- and
- **Poster Session on Wednesday**, July 4, 2012, for posters with odd numbers from 3 p.m. till 5:20 p.m.



## SOCIAL PROGRAM

**Wednesday, July 4, 2012****from 7 – 11 p.m.****Bavarian evening** at the Paulaner am Nockherberg

15 € – drinks and buffet included.

Enjoy an typical Bavarian evening with your colleagues in a traditional Bavarian brewery. A bus shuttle service will be provided.

Departure time from the congress center to the brewery 7 p.m.;  
Departure time from the brewery to the main railway station  
from 10.p.m. to 11.p.m. every 15 min.

**Thursday, July 5, 2012****from 8 – 12 p.m.****Congress Dinner** at the Residenz Munich

75 € – drinks and menue included.

The Munich Residenz served as the seat of government and residence of the Bavarian dukes, electors and kings from 1508 to 1918, and began in 1385 as a castle. The architecture, interior decoration and works of art collected in the Residenz range in time from the Renaissance, via the early Baroque and Rococo periods to the neoclassical era.

The Munich Residenz is located in the city center and can easily be reached by public transport. U-tram station U3-U6 Odeonsplatz nearby the Residenz.

Entrance from Hofgarten or Residenzstrasse into the Kaiserhof (Emperor's Court), to the Kaisersaal (Emperor's Hall) and the adjoining Vierschimmelsaal (Four Greys Room) on the first floor.

**Thursday, July 5, 2012****from 8:30 p.m.****Students Party** at the Club P1

10 € – drinks included.

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„P-one“ - as an abbreviation for „Prinzregentenstraße 1“, nearby U-station Odeonsplatz

