Scientific Program

The 4th International Symposium on Advanced Electron Microscopy for Catalysis

	Wednesday, 27 January
Registration	
13:20-13:30	Openning: **Dang Sheng Su, Robert Schlögl**
SESSION 1	Chairman: **Dang Sheng Su**
13:30-14:10	**Stig Helveg** Electron microscopy of catalysts in action
14:10-14:50	**Christian Jooß** Towards controlled electro-chemistry of complex oxides in environmental transmission electron-microscopy
14:50-15:10	**Marc Willinger** The dynamics of active metal catalysts revealed by in-situ electron microscope
15:10-15:40	Coffee Break
SESSION 2	Chairman: **Gianluigi Botton**
15:40-16:20	**Seiji Takeda** Aberration corrected ETEM study on the effect of moisture on catalysts in gases
16:20-17:00	**Nigel D. Browning** Imaging Dynamic Processes in Liquids Using Aberration Corrected (Scanning/Dynamic) Transmission Electron Microscopy
17:00-17:20	**Yan Zhou** ETEM Study on Reduction Process of CuO_x/CeO_2 Catalysts
17:30-20:30	Poster Session with Snack

	Thursday, 28 January
SESSION 3	Chairman: **Abhaya K. Datye**
9:00-9:40	**Gianluigi Botton** Analytical microscopy of alloy nanocatalysts
9:40-10:20	**Peter A. Crozier** Probing Vibrational and Electronic Surface States on Nanoparticles with Monochromated EELS
10:20-10:40	**Thierry Epicier** Tuning the reduction state and atomic resolution study of cerium oxide (CeO_2) nanocubes under reducing and oxidizing conditions in a C_s-corrected Environmental TEM (ETEM)
10:40-11:00	Coffee Break
SESSION 4	Chairman: **Christian Jooß**
11:00-11:40	**Krijn P. de Jong** Electron Microscopy Studies of Nanoscale Effects in $Pt/Al_2O_3/Y$ Catalysts
11:40-12:00	**Cuong Pham-Huu** Fundamental investigation of graphene surface catalytic patterning with ambient environmental TEM
12:00-12:20	**Yong Wang** Real time observation of the reconstructing TiO_2 (001) surface via ETEM
12:20-12:40	**Stephan Steinhauer** Environmental Transmission Electron Microscopy of Catalytic Pd Nanoparticles on CuO Nanowire Surfaces
12:40-14:00	Lunch

SESSION 5	Chairman: **Peter A. Crozier**
14:00-14:40	**Nejc Hodnik** Identical location and in-situ electron microscopy study of electrocatalyst degradation
14:40-15:00	**Thomas Lunkenbein** Quasi In-situ Catalytic Studies Using a TEM grid microreactor
15:00-15:20	**Siddardha Koneti** Calcination of Pd nanoparticles on alumina: ex-situ analysis versus in-situ Environmental TEM
15:20-15:40	**Marc Heggen** Growth and degradation of octahedral Pt-alloy nanoparticle catalysts
15:40-16:00	Coffee Break
SESSION 6	Chairman: **Paul Midgley**
16:00-16:40	**Kunio Takayanagi** In-situ Lithium Transport in a single Nanowire Electrode of LIB
16:40-17:40	**Company Presentation:** **FEI**: FEI solutions for in situ EM: Expanding the capabilities **Protochips**: Applications and Capabilities of the Atmosphere Gas E-cell for In Situ TEM **DENSsolutions**: Towards direct imaging of catalyst at working condition
17:40-18:50	**Discussion: Problem, Challenge and Perspective of Environmental EM**
19:00-21:00	Conference Dinner

	Friday, 29 January
SESSION 7	Chairman: **Stig Helveg**
9:00-9:40	**Abhaya K. Datye** Electron Microscopy of the Emission and Trapping of Mobile Species during Catalyst Sintering
9:40-10:20	**Paul Midgley** More from less and less from more! De-noising and decomposition of 3D data with application to catalysts and nanoparticles
10:20-10:40	**Lucian Roiban** Fast Transmission Electron Tomography: application to the environmental 3D analysis of nano-materials
10:40-11:00	Coffee Break
SESSION 8	Chairman: **Dang Sheng Su**
11:00-11:20	**Katherine E. MacArthur** Quantitative Compositional Analysis of Fuel-Cell Catalysts Using EDX Partial Cross Sections
11:20-11:40	**Lewys Jones** Measurement and visualization of picometre-scale displacements and lattice parameter changes on the surface of Pt_3Co nanoparticles
11:40-12:20	**Archie Howie** Prospects for Improved Characterization of Energy Efficient Materials by Electron Microscopy
12:20-12:30	Closing discussion **Dang Sheng Su, Robert Schlögl**
12:30	Lunch

Poster List

Poster session: Wednesday, 27 January, 17:30 – 20:30

No.	Presented by	Title
P1	Thomas Götsch	Using Čerenkov Spectroscopy to Elucidate the Electronic Structure of Yttria-Stabilized Zirconia
P2	Zbigniew Sojka	Oxidative phase transformation of Fe3O4 nanoparticles during catalytic N2O decomposition visualized by STEM/EELS at the nanoscale
P3	Marian Bongers	Interaction of hydrogen with titanium-dioxide/palladium bilayers studied by HR-STEM EELS
P4	Simon Penner	A study of metal-support interaction effects by aberration-corrected electron microscopy and spectroscopy
P5	Ann-Christin Swertz	Energy Dispersive X-ray Analysis of Pt-Ni nanoparticles embedded in Hollow Graphitic Spheres used as Fuel-Cell Catalysts
P6	Ann-Christin Swertz	Analysis of Platinum-cobalt bimetallic nanoparticles in Hollow Carbon Spheres: A catalyst for hydrogenolysis of 5-hydroxymethylfurfural
P7	Wen Shi	Identical-location transmission electron microscopy investigation on the structural evolution of Pt/NCNT catalyst in nitrobenzene hydrogenation
P8	Aakash Varambhia	Quantitative imaging of ruthenium rafts on carbon black support using HAADF STEM imaging.
P9	Bingsen Zhang	Interaction between Palladium Nanoparticles and Surface-Modified Carbon Nanotubes: Role of Surface Functionalities
P10	Claudio Evangelisti	TiO2 Nanotubes loaded with Au Nanoparticles as Efficient Photocatalyst for Toluene Degradation
P11	Andreja Gajovic	TiO_2 nanotubes decorated by Ag and modified in reduction atmosphere
P12	Qin Kuang	Efficiently Enhancing the Photocatalytic Activity of Faceted TiO_2 Nanocrystals by Selectively Loading α-Fe_2O_3 and Pt Co-catalysts

P13	Alberto Villa	A TEM Investigation of Metal Nanoparticles on Reducible Oxides
P14	Malgorzata Malecka	Solid state reactions in highly dispersed Ce1-xYbxO2-y-Al2O3 system
P15	Michalina Kurnatowska	Nanocrystalline Ce1-xCoxO2-y mixed oxide catalyst for CO oxidation
P16	Joanna Grybos	Shape and size of cobalt nanospinel catalysts from single STEM measurement
P17	Yiming Niu	Correlation between the Well-defined Structure of Pd Catalysts and the Selectivity in Acetylene Hydrogenation
P18	Qiuxiang Wang	Highly selective epoxidation of propylene catalyzed by surfactant-free rhombic dodecahedral Cu2O nanocrystals
P19	Jo-Chi Tseng	Microstructure analysis of nanosized CuO: combination of XRD and TEM
P20	Naoto Kamiuchi	Nanostructures of nanoporous gold catalyst prepared by dealloying method
P21	Liangfeng Luo	MgO Morphology-dependent Li-MgO Interaction in Li/MgO Catalysts for Oxidative Coupling of Methane
P22	Xi Liu	Highly Dense Isolated Metal Atom Catalytic Sites: Dynamic Formation and In Situ Observations
P23	Wentao Yuan	Direct observation of facet-dependent heterogeneous catalysis: Pt-catalyzed graphene oxidation
P24	Christian Danvand Damsgaard	ETEM characterization of NiGa model catalysts for CO2 hydrogenation to Methanol
P25	Ian Allen	Catalytic soot oxidation studied in situ by Transmission Electron Microscopy
P26	Vladimir Roddatis	Microstructural changes in Pd and Nb thin films upon H2 loading observed by ETEM

P27	Ramzi Farra	Micro- and Nanoscale observations of gas-solid interactions using in situ SEM and TEM techniques: a case study of CNTs growth on Nickel
P28	Simona Moldovan	In-situ TEM study of the reactivity of confined anisotropic cobalt-based nanostructures submitted to reduction and oxidative environments
P29	Jaysen Nelayah	In situ atomic scale imaging of metallic nanocatalysts in gas environments and at high temperatures using Cs-Corrected environmental TEM
P30	Sagar Prabhudev	Atomic-resolution Imaging and Spectroscopy of Fuel Cell Nanocatalysts
P31	Martin Gocyla	Microstructural investigation of octahedral PtNiRh fuel cell catalyst nanoparticles produced by a new synthesis route
P32	Lidija Rafailovic	Functionalizing aluminium oxide by Ag dendrite deposition during simultaneous electrochemical oxidation
P33	Marcello Marelli	Disclosing the nanostructure of hematite nanoplatelet-films for active PEC water splitting
P34	Jaeyoung Lee	Investigation of physico-chemical properties of electrocatalysts with microscopy technology for electrochemical cell
P35	Rui Zhang	Electron-microscopic Analyses of the Solid Electrolyte Interphase on Lithium Metal Anodes
P36	Quiang Zhang	TEM analysis of 3D graphene for Li-S batteries
P37	Gerardo Algara-Siller	The pristine structure of MoS_2 monolayer protected from electron radiation damage by graphene