

International Conference on
**Functional Materials: Catalysis, Electrochemistry
and Surfactants**

COST Action D36 Final Workshop
Fuengirola, 17th to 20 of May, 2011

Tuesday 17th

16:00 – 19:00 Registration at Conference Desk

17:30 – 18:30 Keynote 1

Chair Session: M.O. Guerrero-Pérez (Universidad de Málaga, Spain)

Israel Wachs, Lehigh University, Bethlehem, (PA, USA)

“Investigation of Methane Aromatization over Mo/ZSM-5 Catalysts with Operando Molecular Spectroscopy and DFT Calculations”

18:30 – 20:15 Oral Session 1

Chair Session: I.E. Wachs (Lehigh University, USA)

O1 18:30 – 18:45 S. Boghosian, University of Patras (Greece)

“On the configuration of MoO_x sites on alumina, zirconia and titania. Vibrational properties, molecular structure and vibrational isotope effects”

O2 18:45 – 19:00 J. Ruíz Martínez, Utrecht University (The Netherlands)

“Optical and Fluorescence Microspectroscopy Reveal Reactivity and Porosity Heterogeneities in Fluid Catalytic Cracking Particles”

O3 19:00 – 19:15 M. Kantcheva, Bilkent University (Turkey)

“Spectroscopic Characterization of Gold Supported on Tungstated Zirconia”

O4 19:15 – 19:30 K. Frey, Institute of Isotopes (Hungary)

“SiO₂ supported Ag-Au alloy nanoparticles with high catalytic activity in selective oxidation of glucose”

O5 19:30 – 19:45 Q. Qian, Utrecht University (The Netherlands)

”Revealing the Intergrowth Structure and Related Molecular Diffusion Boundaries within Zeolite SAPO-34 Crystals by In-situ Micro-Spectroscopy”

O6 19:45 – 20:00 G. Melaet, Université Libre de Bruxelles (Belgium)

“Sulfur resistant Pd/SiO₂-TiO₂ catalyst for the total oxidation of methane”

O7 20:00 – 20:15 M. Ziolk, Adam Mickiewicz University (Poland)

“Sb, V, Nb containing catalysts in low temperature oxidation of methanol - the role of preparation method on the activity and selectivity”

21:00 Welcome Reception (Fuengirola Castle)



Wednesday 18th

9:00 – 9:30 Conference Official Opening

Adelaida de la Calle Martín, Rector of University of Málaga
Esperanza Oña Sevilla, Mayor of Fuengirola
Miguel A. Bañares González, COST Action D36 Chair
M. Olga Guerrero Pérez, Conference Organizer

9:30 -10:30 Keynote 2

Chair Session: M.A. Bañares (CSIC, Spain)

Veronica Ganduglia-Pirovano, Instituto de Catálisis y Petroleoquímica (Madrid, Spain)

“A theoretical perspective of the effect of the support in heterogeneous catalysis: The example of vanadia catalysts for selective oxidation”

10:30 – 11:30 Oral Session 2

Chair Session: M.V. Martínez Huerta (ICP-CSIC, Spain)

O8 10:30 – 10:45 L. Pospisil, J. Heyrovský Institute of Physical Chemistry (Czech Republic)

Stability, Periodicity and Chaos in Electron Transfer Reactions at Surfaces: Example of a Molecular Oscillator

O9 10:45 – 11:00 V. Parvulescu, Institute of Physical Chemistry (Romania)

“Transitional metal complexes on phosphonates copolymer supports as catalysts for the oxidation of organic compounds”

O10 11:00 – 11:15 A. Horvath, Institute of Isotopes, (Hungary)

“Development of AuNi bimetallic catalysts for CO₂ reforming of methane”

O11 11:15 – 11:30 A. Marinas, Universidad de Córdoba (Spain)

“Study of Structure-Performance Relationships in Meerwein-Ponndorf-Verley reduction of crotonaldehyde on several magnesium and zirconium-based systems”

11:30 – 12:00 Coffee Break

12:00 – 13:45 Oral Session 3

Chair Session: M.R. Infante (CSIC, Spain)

O12 12:00 – 12:15 C. La Mesa, La Sapienza University, (Italy)

“Size and Charge Modulation of Surfactant-based Vesicles”

O13 12:15 – 12:30 B. Lindman, University of Lund (Sweden)

“Functional surfaces by deposition from polymer-surfactant formulations: Application of solvency”

O14 12:30 – 12:45 M. Miguel, Coimbra University (Portugal)

“Novel Gels and Nanoparticles from mixtures of DNA with Cationic Surfactants and Proteins”

O15 12:45 – 13:00 R. Pons, CSIC (Spain)

“Lysine based surfactants: relationship between chemical structure and adsorption/aggregation properties”

O16 13:00 – 13:15 V. Ribitsch, *Universitat Graz (Austria)*

“Preparation and Characterization of Sol-Gel functionalised Polysaccharides”

O17 13:15 – 13:30 K. Stana-Kleinschek, *University of Maribor (Slovenia)*

“Regeneration of cellulose from trimethylsilyl cellulose and their surface characterization”

O18 13:30 – 13:45 G. Risuleo, *Università di Roma (Italy)*

“Comparison of the RNA transfection efficiency of cat-anionic nanoparticles”

14:00 – 15:00 Lunch

16:00 – 20:00 Visit to Málaga, including dinner at “Parador de Gibralfaro”

Thursday 19th

9:00 – 10:00 Keynote 3

Chair Session: T. Cordero (Universidad de Málaga, Spain)

Emilia Morallón, *Universidad de Alicante (Spain)*
“Electrocatalysts for environmental remediation”

10:00 – 11:30 Oral Session 4

Chair Session: A.M. Venezia (ISMN-CNR, Italy)

O19 10:00 – 10:15 A. Martínez Arias, *CSIC (Spain)*
“Preferential oxidation of CO in excess H₂ over CuO/CeO₂ catalysts: performance as a function of the exposed face present in the CeO₂ support”

O20 10:15 – 10:30 R. Grabowski, *Polish Academy of Sciences (Poland)*
“Au/FeO_x catalysts of different degree of iron oxide reduction in CO oxidation”

O21 10:30 – 10:45 L. Liotta, *ISMN-CNR (Italy)*
“Au/CeO₂-SBA-15 catalysts for CO oxidation: effect of ceria loading on structural and catalytic performances”

O22 10:45 – 11:00 I. Miguel-García, *Universidad de Alicante (Spain)*
“Effect of aging on PVP-coated palladium nanoparticle suspensions in the preferential oxidation of CO (PrOx)”

O23 11:00 – 11:15 E. Madej, *Polish Academy of Sciences (Poland)*
“CO adsorption on AuFe and FeAu bimetallic clusters deposited on TiO₂(110)”

O24 11:15 – 11:30 D.J. Fermín, *University of Bristol (UK)*
“Electrocatalytic Properties of Ultrathin Pd Layers at Au Nanostructures”

11:30 – 12:00 Coffee Break

12:00– 13:30 Oral Session 5

Chair Session: D. Fermín (University of Bristol, UK)

O25 12:00 – 12:15 L.M. Abrantes, *Universidade de Lisboa (Portugal)*
“Potential-assisted Assembly of Phosphonic Acids Monolayers onto Different Surfaces”

O26 12:15 – 12:30 M. Hromadrová, *J. Heyrovský Institute of Physical Chemistry (Czech Republic)*
“Electron Dopable Molecular Wires Based on the Extended Viologens. Their Electrochemical, Adsorption and Complex Formation Properties”

O27 12:30 – 12:45 V. Papaefthimiou, *LMSPC (France)*
“Surface modifications of PtCo/TiO₂ catalysts upon reduction-oxidation cycles studied by ambient pressure photoelectron and absorption spectroscopies”

O28 12:45 – 13:00 P. Peljo, *Aalto Universit (Finland)*
“Molecular electrocatalysis at liquid/liquid interface: a fuel cell approach”

O29 13:00 – 13:15 M.V. Martínez-Huerta, *ICP-CSIC (Spain)*
“Alcohol electrooxidation on carbon supported PtRuMo nanoparticles”

O30 13:15 – 13:30 A. Colina, Universidad de Burgos (Spain)
“Electrodeposition of Pd nanoparticles at the liquid/liquid interface”

14:00 – 15:00 Lunch

15:30 – 16:30 Keynote 4

Chair Session: M.A. Bañares (CSIC, Spain)

Robert Schoonheydt, Catholic University of Leuven, (Belgium)
“Coordination Chemistry of and catalysis with Cu^{2+} in Cu-ZSM-5”

16:30 -20:30 Poster Session

21:00 BBQ buffet at Hotel Beatriz



Friday 20th

9:00 – 10:00 Keynote 5

Chair Session: M.O. Guerrero-Pérez (Universidad de Málaga, Spain)

Fabrizio Cavani, *Università di Bologna (Italy)*

“Understanding the catalyst-reactants interaction in heterogeneous catalysis: two examples of industrial interest”

10:00 – 11:30 Oral Session 6

Chair Session: J. Rodríguez-Mirasol (Universidad de Málaga, Spain)

O31 10:00 – 10:15 A.R. de la Osa, *Universidad de Castilla la Mancha (Spain)*

“Fischer-Tropsch fuels production over different Co/SiC catalyst”

O32 10:15 – 10:30 M.D. Hernández-Alonso, *CIEMAT (Spain)*

“Optimizing the Yield of One-Dimensional TiO₂ Nanostructures for Air Treatment Applications”

O33 10:30 – 10:45 R. Luque, *Universidad de Córdoba (Spain)*

“Novel preparation of supported transition metal nanoparticles on porous materials. Methods and catalytic applications”

O34 10:45 – 11:00 J. Bedia, *Universidad Autónoma de Madrid (Spain)*

“Highly stable Fe on activated carbon catalysts for CWPO”

O35 11:00 – 11:15 G. Mul, *University of Twente (The Netherlands)*

“Optimizing Process Parameters for TiO₂ based Photocatalytic Oxidation”

O36 11:15 – 11:30 R. Mariscal, *CSIC (Spain)*

“Glycerol hydrogenolysis to 1,2-propanediol with Cu/-Al₂O₃: Effect of the activation process”

11:30 – 12:00 Coffee Break

12:00 – 13:45 Oral Session 7

Chair Session: M. Ziolek (Adam Mickiewicz University, Poland)

O37 12:00 – 12:15 E. Rodríguez-Castellón, *Universidad de Málaga (Spain)*

“Al-pillared montmorillonite as support of catalysts based on ruthenium sulfided for HDS reaction”

O38 12:15 – 12:30 J. Fraissard, *LPEM - ESPCI and UPMC (France)*

“Competitive Diffusion of Gases in a Zeolite Using a Slice Selection Procedure”

O39 12:30 – 12:45 P. Braos-García, *Universidad de Málaga (Spain)*

“Stable sulfated zirconia prepared by using zirconium doped mesoporous MCM-41 silica as catalyst for the esterification of oleic acid with methanol”

O40 12:45 – 13:00 M. Selvaraj, *Pusan National University (Republic of Korea)*

“A novel heterogeneous route for highly selective synthesis of flavan over an efficient solid catalyst, Zn-Al-MCM-41”

O41 13:00 – 13:15 M. Trejda, *Adam Mickiewicz University (Poland)*

”Insight into the role of niobium in the preparation of SBA-15 mesoporous acidic catalysts”

O42 13:15 – 13:30 V. Kaucic, *National Institute of Chemistry (Slovenia)*
“MnOx Nanoparticles Immobilized on a New Mesostructured Silicate KIL-2”

O43 13:30 – 13:45 K. Triantafyllidis, *Aristotle University of Thessaloniki (Greece)*
“Propylene epoxidation by molecular oxygen using supported silver catalysts: Effect of support type, preparation method and alkali chloride promotion”

14:00 – 15:00 Lunch

15:30– 19:00 COST Action D36 Presentations

Chair Session: M.A. Bañares (CSIC, Spain)

15:30 – 16:00 Miguel A. Bañares. *Instituto de Catálisis y Petroleoquímica (Spain)*

16:00 – 16:30 M. Rosa Infante. *CSIC (Spain)*
WG D36/008/06 Biopolymers based surfactants- Stabilization and functionalization of particles and surfaces

16:30 – 17:00 Anna Maria Venezia. *ISMN CNR (Italy)*
WG D36/003/06: Interfacial functionalization of (bi)-metallic nanoparticles to prepare highly active and selective catalysts: understanding synergy and/or promotion effect.

17:00 - 17:30 David J. Fermín. *University of Bristol (UK)*.
WG D36/005/06 2009 Structure Reactivity Relationships of Pt and Pd Nanoarrays

17:30 - 18:00 Guido Mul. *University of Twente (The Netherlands)*
WG D36/006/0: Understanding the chemical reactivity of alcohols over catalytic materials: from probe molecules to practical applications

18:00 – 18:30 Hubert H. Girault. *Ecole Polytechnique Federale de Lausanne (Switzerland)*
WG D36/007/06 Molecular Catalysis and Photocatalysis at Soft Interfaces: Towards Chemical Fuel Cells

18:30 – 19:00 Lubomir Pospisil. *J. Heyrovsky Institute of Physical Chemistry (Czech Republic)*
WG D36/001/06: Redox activity of host-guest, organometallic and molecular structures at electrode interfaces.

19:30 -20:30 MC Meeting (only for MC members)

Poster Contributions

P1 S. Airaksinen, *Aalto University (Finland)*

“Surface characterization of zirconia-based catalysts by methanol probe reaction: in situ DRIFTS measurements”

P2 R. Andersson, *Royal Institute of Technology (Sweden)*

“Chemical Transient Kinetics Applied to CO hydrogenation over Molybdenum sulfide based catalysts”

P3 D. Andreeva, *Bulgarian Academy of Sciences (Bulgaria)*

“Catalytic performance in the WGS reaction of gold catalysts on ceria doped by different metals (Fe, Mn and Sn): influence of the preparation method and dopant nature”

P4 S. Alekseev, *National Taras Shevchenko University (Ucrania)*

“TS-1/MCM-41 hybrid materials for catalytical oxidation”

P5 J. Benavente, *Universidad de Malaga (Spain)*

“Surface and bulk characterizations of Nafion membranes modified with n-nodocyltriethylammonium cation: effect of membrane thickness”

P6 G. Blanco, *Institute of Catalysis and Petrochemistry CSIC (Spain)*

“Decomposition of hydrogen peroxide in the epoxidation effluent of HPPO process”

P7 V. Calvino-Casilda, *Institute of Catalysis and Petrochemistry CSIC (Spain)*

“In situ Raman monitoring of Michael addition for the synthesis of 1-substituted imidazoles intermediates with antiviral properties”

P8 M. Capel, *Institute of Catalysis and Petrochemistry CSIC (Spain)*

“Selective Liquid Phase Oxidation of Glycerol over Carbon Supported Monometallic Catalysts”

P9 E.H. de Faria and K.J. Ciuffi, *Universidade de Franca (Brazil)*

“Kaolinite Covalently Grafted with Fe(III) pyridine-carboxylate complexes as catalyst for heterogeneous Baeyer-Villiger oxidation of cyclohexanone”

P10 C.J. Durán-Valle, *Universidad de Extremadura (Spain)*

“Activated carbon as a catalyst for the synthesis of N-alkylimidazoles and imidazolium ionic liquids”

P11 M. García-Casado, *Institute of Catalysis and Petrochemistry CSIC (Spain)*

“Modeling Molecular Structure and Reactivity of Alkali-promoted Alumina-supported Vanadium Oxide”

P12 M.O. Guerrero-Pérez, *Universidad de Málaga (Spain)*

“New Zr-V-O carbon-supported catalyst for oxidation reactions: surface active sites and thermal stability”

P13 W. Grünert, *Ruhr Universität Bochum (Germany)*

“The relation of vanadium and tungsten species in V₂O₅-WO₃/TiO₂ DeNO_x catalysts: an investigation with catalytic and spectroscopic tools”

P14 L. Ilieva, *Institute of Catalysis (Bulgaria)*

“Complete benzene oxidation over gold catalysts supported on ceria doped by transition metal oxides: structure - properties - activity relationship of Au/CeO₂-CoO_x catalysts”

P15 E.F. Iliopoulou, CPERI/CERTH (Greece)

“Catalytic upgrading of biomass pyrolysis vapours using transition metal-modified ZSM-5 zeolite”

P16 M.R. Infante, IQAC-CSIC (Spain)

“Bio-Based Surfactants from Renewable Resources”

P17 I. Kauppi, Aalto University (Finland)

“The effect of sulfur on ZrO₂-based biomass gasification gas clean-up catalysts studied by MeOH adsorption”

P18 E. Kaletova, Institute of Organic Chemistry and Biochemistry (Czech Republic)

“Electrochemical characterization of SAM's on a gold surface”

P19 C. La Mesa, La Sapienza University (Italy)

“Dispersions of carbon nano-tubes in lyotropic nematic solvents”

P20 M.L. Testa, Istituto per lo Studio di materiali Nanostrutturati (Italy)

“Synthesis of PdAu hydrotreating catalysts over mercaptopropyl functionalized HMS”

P21 L.F. Liotta, ISMN-CNR (Italy)

“Pd/LaMn_{0.4}Fe_{0.6}O₃ perovskites supported over SBA-15 as catalysts for methane oxidation”

P22 J. López-Sanz, Universidad Nacional de Educación a Distancia (Spain)

“New inorganic-organic hybrids materials based on SBA-15 molecular sieves involved in the quinolines synthesis”

P23 R. López-Medina, Institute of Catalysis and Petrochemistry, CSIC (Spain)

“Propylene and Oxygen adsorption FTIR study over Nanostructured MoVNb(Te)O catalysts”

P24 M. Lualdi, Royal Institute of Technology (Sweden)

“The effect of TiO₂ and Al₂O₃ addition on the catalytic performance of Co/SBA-15 catalysts for Fischer - Tropsch synthesis”

P25 A. Martínez-Arias, CSIC (Spain)

“Solar light assisted photodegradation of phenol with hydrogen peroxide over iron-doped titania catalysts”

P26 M.V. Martínez-Huerta, CSIC (Spain)

“Pt nanoparticles on modified chitosan for direct alcohol fuel cells applications”

P27 M. Méndez, EPFL (Switzerland)

“Molecular Catalysis at Liquid-Liquid Interfaces”

P28 E. Mikolajska, Institute of Catalysis and Petrochemistry, CSIC (Spain)

“Operando and in-situ Raman-GC Studies of alumina-supported vanadium phosphate catalysts in propane ammoxidation reaction: Activity, selectivity and active phase formation”

P29 D-W. Park, Pusan National University (Korea)

“Quaternary Ammonium Salt Functionalized Montmorillonite Clay for its Catalytic Application in the Synthesis of Cyclic Carbonate from CO₂ and Epoxides”

P30 A. Pinazo, Institut de Química Avançada de Catalunya (Spain)

“Lysine-based Cationic Surfactants”

P31 E. Pérez-Mayoral, UNED (Spain)

“Environmentally benign route for isomerisation of olefins using activated carbons as base catalysts”

P32 F. Regali, Royal Institute of Technology (Sweden)

“Hydrocracking of Fischer-Tropsch waxes over Pt/Pd catalysts supported on amorphous silica-alumina”



- P33 E. Rojas-García**, *Institute of Catalysis and Petrochemistry, CSIC (Spain)*
 “Quantum Chemical study of the Ethane and Propane (Amm)oxidation Mechanisms on the (110) VSbO₄ Rutile Surface”
- P34 R. Ruíz-Rosas**, *Universidad de Málaga (Spain)*
 “Kinetic study of no reduction on carbon-supported chromium catalysts”
- P35 R. Ruíz-Rosas**, *Universidad de Málaga (Spain)*
 “Methanol decomposition on electrospun zirconia nanofibers”
- P36 I. Sobczak**, *Adam Mickiewicz University (Poland)*
 “Cu_xCr_yO_z mixed oxide as attractive support for gold - the role of methods of Au loading on the effectiveness in oxidation reactions”
- P37 R.P. Socha**, *Polish Academy of Sciences (Poland)*
 “Electronic state of Au adsorbed on defected MgO(100) surfaces”
- P38 M. Selvaraj**, *Pusan National University (Korea)*
 “Benzoylation of 1,2-dimethoxybenzene with benzoic anhydride over mesoporous AISBA-15 catalysts synthesized by an efficient hydrothermal method”
- P39 E. Simón**, *Universidad Complutense de Madrid (Spain)*
 “Study of the deactivation of copper-based catalysts for dehydrogenation of cyclohexanol to cyclohexanone”
- P40 J.A. Sullivan**, *University College Dublin (Ireland)*
 “Tethered bi-nuclear complexes for CO₂ Hydrogenation”
- P41 M.J. Valero-Romero**, *Universidad de Málaga (Spain)*
 “Template synthesis of porous carbon materials with acidic properties”
- P42 E. Vilarrasa García**, *Universidad de Málaga (Spain)*
 “Characterization of mesoporous ferric sludge with potential use in photocatalytic water treatment”
- P43 M. Ziolek**, *Adam Mickiewicz University (Poland)*
 “Enhancement of basicity in faujasite type zeolites by the isomorphous substitution with niobium and tantalum - experimental and theoretical evidences”
- P44 J.J. Delgado**, *University of Cadiz (Spain)*
 “Development of a system for TEM/STEM investigation of air-sensitive materials: Preliminary results on CeO₂ reduction behavior”