Curriculum Vitae – Prof. Dr. Javier Pérez-Ramírez

Date of birth 28 October 1974
Place of birth Benidorm, Spain
Citizenship Spanish
Civil status Married to Amalia, son Erik (16), daughter Marlies (11)
Address ETH Zurich
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Education

1998 – 2002 Ph.D. Catalysis Engineering (cum laude), Delft University of Technology, Netherlands. Catalyzed N_2O Activation: Promising (New) Catalysts for Abatement and Utilization. Advisors: Profs. F. Kapteijn and J.A. Moulijn

1993 – 1997 M.Sc. Chemical Engineering with highest distinction, University of Alicante, Spain

Summary of Career

2019 – to date Isaac Manasseh Meyer Chair Visiting Professor, National University of Singapore

2010 – to date Full Professor of Catalysis Engineering, ETH Zurich

2005 – 2009 ICREA Professor and Group Leader, Institute of Chemical Research of Catalonia, Tarragona, Spain

2005 – 2008 Associate Professor, Department of Chemical Engineering, Universitat Rovira i Virgili, Tarragona, Spain

2002 – 2005 Scientist, Norsk Hydro and Yara International, Porsgrunn, Norway

Institutional Responsibilities

2020 – to date Director of the NCCR Sustainable Chemical Processes through Catalysis

2019 – to date Director of the Flagship Green Energy Program, National University of Singapore

2018 – to date Director of Studies, BSc Chemical Engineering and MSc Chemical and Bioengineering, ETH Zurich

2015 – to date Mentor of assistant Professors, Profs. C.-J. Shih and P. Arosio, ETH Zurich

2012 – 2014 Chairman of the Institute for Chemical and Bioengineering, ETH Zurich

Publications Summary

Hirsch index: 81 (Scopus), 89 (Google Scholar) | Authored more than 430+ publications in peer-reviewed scientific journals | >25000 citations, with an average of >40 citations per paper | In the last 5 years, 150+ publications and >15000 citations | Author of high-impact multidisciplinary and chemistry articles, *e.g.*, Nature Chemistry (#5), Nature Communications (#4), Nature Nanotechnology (#1), Nature Catalysis (#3), Chemical Reviews (#1), Chemical Society Reviews (#6), Journal of the American Chemical Society (#3) | Angewandte Chemie International Edition (#21) | Inventor of 24 patents/patent applications, 4 of which are exploited industrially | Authored of 15 articles in proceedings and 5 book chapters | Guest-edited 6 themed issues | Analysis conducted on April 12, 2020.

Research Summary

jpr pursues the discovery and understanding of catalytic materials and process concepts, leading to improved technologies for the sustainable manufacture of chemicals and fuels. Specific emphasis is placed on tackling current and future energy, resource, and environmental challenges of society. His team strives for the establishment of structure-function relationships of chemical processes at different length and time scales, combining scalable catalyst synthesis with advanced characterization and evaluation under relevant conditions. The main topics of interest include the valorization of renewables, carbon dioxide, and natural gas into energy carriers and intermediates using tailored nano- and mesostructured materials. More details in the group's website.

Awards and Honors

2020 College of Engineering Distinguished Lecturer, Nanyang Technological University, Singapore
2019 Paul H. Emmett Award in Fundamental Catalysis, North American Catalysis Society, US
2019 Distinguished Lecturer, Beijing Institute of Technology, China
2018 Syngenta Chemistry Lecture, Stein, Switzerland
2018 DICP Zhang Dayu Young Investigator Lectureship, Dalian, China
2018 Xing Da Lectureship, Peking University, China
2017 Sustainable Energy Award, Royal Society of Chemistry, UK
2014 Beilby Medal and Prize, Society of Chemical Industry and Royal Society of Chemistry, UK
2013 EFCATS Young Researcher Award, European Federation of Catalysis Societies
2013 Fellow of the Royal Society of Chemistry, UK
2013 Andrew Main Lectureship, University of Alberta, Canada
2012 Otto-Roelen Medal, Dechema, Germany
2012 UOP-Honeywell Invitational Lectureship, US
2007 Journal Grant for International Authors, Royal Society of Chemistry, UK (also in 2009)
2006 Most Cited Author 2001-2005, Journal of Catalysis, Elsevier Science
2003 KNCV Prijs voor Katalyse, Dutch Catalysis Society, the Netherlands
2002 Dow Energy Dissertation Award, The Dow Chemical Company, the Netherlands
1999 Presentation prize, AIChE Meeting, Scheiveningen, the Netherlands

10 Research Highlights in the Last 5 Years

- Catalysts to realize the conversion of CO_2 to methanol on a commercial scale
  Angew. Chem. Int. Ed. **2016**, 55, 6261 | *Nat. Commun.* **2019**, 10:3377
- Catalytic technologies for the valorization of natural gas using halogen chemistry
  Nat. Chem. **2016**, 8, 803 | *Angew. Chem. Int. Ed.* **2017**, 56, 13670 | *Nat. Catal.* **2018**, 1, 363 | *Angew. Chem. Int. Ed.* **2019**, 58, 5877
- Design of catalysts based on single atoms and low-nuclearity clusters
  Angew. Chem. Int. Ed. **2015**, 54, 11265 | *Nat. Nanotechnol.* **2018**, 13, 702 | *Angew. Chem. Int. Ed.* **2019**, 58, 504 | *Angew. Chem. Int. Ed.* **2019**, 58, 8724
- Platinum single-atom catalysts for stable vinyl chloride production via acetylene hydrochlorination
  Nat. Catal. **2020**, doi:10.1038/s41929-020-0431-3
- Design of CO_2 reduction electrocatalysts
  Nat. Commun. **2018**, 9:1477 | *Chem* **2020**, doi:10.1016/j.chempr.2020.04.001
- Ensemble design for selective hydrogenations
  Angew. Chem. Int. Ed. **2014**, 53, 12069 | *Angew. Chem. Int. Ed.* **2017**, 56, 10755 | *Nat. Commun.* **2018**, 9:2634 | *Nat. Catal.* **2019**, 2, 971-976
- Application of statistical learning to design superior catalysts
  ACS Catal. **2020**, doi:10.1021/acscatal.0c00679
- Catalyst and process design for the renewable manufacture of fuels and chemicals
  Energy Environ. Sci. **2015**, 8, 558 | *Energy Environ. Sci.* **2018**, 11, 1012 | *Energy Environ. Sci.* **2019**, 12, 3425
- Advanced methods to assess complex pore architectures in hierarchically structured catalysts
  Nat. Commun. **2014**, 5:3922 | *Angew. Chem. Int. Ed.* **2015**, 54, 1591 | *Adv. Funct. Mater.* **2016**, 26, 5621
- Sustainable manufacture of chemicals on capped nanoparticles
  Angew. Chem. Int. Ed. **2017**, 56, 1775 | *Green Chem.* **2017**, 19, 2361

Lectures

>40 plenary lectures and >30 keynote lectures and in international conferences, symposia, and workshops | >250 invited lectures at universities and companies. Selected lectures detailed in the Enclosure.

Selected Visiting Periods

2009 Visiting Professor, Laboratoire Catalyse et Spectrochimie, ENSICAEN, Caen, France
2007 Visiting Professor, Department of Chemical Engineering, UC Berkeley, United States
2003 Visiting Scientist, Institut de Recherches sur la Catalyse, CNRS, Villeurbanne, France
1999 Guest Researcher, Fritz-Haber-Institut der Max-Planck-Gesellschaft, Berlin, Germany

Research Funding
Participation in more than 60 projects funded by governmental programs and industry | Principal investigator in more than 50 projects | Funds raised in the period 2006-2019 >16 M€ | Key projects listed in the Enclosure.

Supervision of Research Work
Advised >30 graduate students, >25 doctoral students, and >30 postdoctoral researchers | Current advisor of 10 doctoral students, 1 postdoctoral researcher, 1 scientist, and 2 lecturers | 23 doctoral theses finalized under his supervision.

Education

2011 – to date	Heterogeneous Reaction Engineering, BSc Chemical Engineering, ETH Zurich, Switzerland
2010 – to date	Catalysis Engineering, MSc Chemical and Bioengineering, ETH Zurich, Switzerland
2010 – 2012	Characterization of Catalysts and Surfaces, ETH Zurich, Switzerland
2006 – 2008	Preparation of Heterogeneous Catalysts, Universitat Rovira i Virgili, Tarragona, Spain
2005 – 2007	Applied Chemical Kinetics, Universitat Rovira i Virgili, Tarragona, Spain
2005 – 2006	Transport Phenomena, Universitat Rovira i Virgili, Tarragona, Spain

Board of Scientific Journals

2019 – to date	Editor in Chief of Catalysis Science & Technology, RSC Publishing
2018 – to date	Board member of Energy Technology, Wiley
2017 – to date	Board member of ChemCatChem, Wiley
2012 – 2018	Board member of Advanced Functional Materials, Wiley
2012 – 2018	Board member of Applied Catalysis B Environmental, Elsevier
2011 – 2018	Associate Editor of Catalysis Science & Technology, RSC Publishing
2010 – 2012	Board member of ACS Catalysis, American Chemical Society
2008 – to date	Board member of Catalysis Communications, Elsevier

Participation in National and International Boards

2017 – to date	Founder and President of SwissCat, the Swiss Catalysis section
2017 – to date	Core member of Energy-X (now Sun-Ergy)
2016 – to date	Scientific Advisory Board of the National Institute of Chemistry, Ljubljana, Slovenia
2016 – to date	Scientific Advisory Board of the Max-Planck Institut für Kohlenforschung, Mulheim, Germany
2012 – 2017	Evaluation Committee member of ICREA, Barcelona, Spain
2012 – to date	Executive Committee member of the Division of Chemical Research, Swiss Chemical Society
2010 – to date	Board member of the European Federation of Catalysis Societies, EFCATS

Chairman of Scientific Meetings

2018	Catalysis across scales, Swiss Chemical Society seminar, Interlaken, Switzerland (with C. Copéret)
2018	Materials, Characterization and Catalysis workshop, ETH Zurich (with S. Mitchell and J. Kenvin)
2011 – 2013	Seminar series on Chemical and Biochemical Engineering, ETH Zurich
2012	Catalysis Science and Engineering session, Swiss Chemical Society meeting, ETH Zurich (with C. Copéret)
2012	International workshop on Advanced Porous Materials, Zurich (with J. Kenvin)
2011	1st Swiss Heterogeneous Catalysis meeting, Grindelwald, Switzerland (with D. Ferri, L. Kiwi-Minsker, J.A. van Bokhoven)

Memberships
Royal Society of Chemistry | American Chemical Society | Swiss Chemical Society | Dechema | American Institute of Chemical Engineers

Languages
Spanish (native) | English, Catalan (fluent) | German (conversational) | Norwegian, Dutch (notions)

Hobbies
Tennis | Running | Motorbikes | Anthropology | Art

List of Publications and Patents

Peer-Reviewed Publications in Scientific Journals

Performance of metal-catalyzed hydrodebromination of dibromomethane analyzed by descriptors derived from statistical learning, A.J. Saadun, S. Pablo-Garcia, V. Paunović, Q. Li, A. Sabadell-Rendón, K. Kleemann, F. Krumeich, N. López, J. Pérez-Ramírez, *ACS Catal.* **2020**, in press (doi:10.1021/acscatal.0c00679, cover)

Selectivity patterns in the electrocatalytic reduction of CO_2 revealed by laser-microstructured copper, F.L.P. Veenstra, N. Ackerl, A.J. Martín, J. Pérez-Ramírez, *Chem* **2020**, in press (doi:10.1016/j.chempr.2020.04.001)

Core-shell structured catalysts for thermocatalytic, photocatalytic, and electrocatalytic conversion of CO_2, S. Das, J. Pérez-Ramírez, J. Gong, N. Dewangan, K. Hidajat, B.C. Gates, S. Kawi, *Chem. Soc. Rev.* **2020**, in press (doi not yet available)

Activity differences of rutile and anatase TiO_2 polymorphs in catalytic HBr oxidation, V. Paunović, M. Rellán, N. López, J. Pérez-Ramírez, *Catal. Today* **2020**, in press (doi:10.1016/j.cattod.2020.03.036)

New analytical tools for advanced mechanistic studies in catalysis: photoionization and photoelectron photoion coincidence spectroscopy, P. Hemberger, J.A. van Bokhoven, J. Pérez-Ramírez, A. Bodi, *Catal. Sci. Technol.* **2020**, 10, 1975-1990 (doi:10.1039/C9CY02587A, inside front cover)

Structure sensitivity and evolution of nickel-bearing nitrogen-doped carbons in the electrochemical reduction of CO_2, S. Büchele, A.J. Martín, S. Mitchell, F. Krumeich, S.M. Collins, S. Xi, A. Borgna, J. Pérez-Ramírez, *ACS Catal.* **2020**, 10, 3444-3454 (doi:10.1021/acscatal.9b05333)

Nanostructuring unlocks high performance of platinum single-atom catalysts for stable vinyl chloride production, S.K. Kaiser, E. Fako, G. Manzocchi, F. Krumeich, R. Hauert, A.H. Clark, O.V. Safonova, N. López, J. Pérez-Ramírez, *Nat. Catal.* **2020**, in press (doi:10.1038/s41929-020-0431-3, highlighted in Chemistry World, front cover)

Green synthesis of hierarchical metal-organic framework/wood functional composites with superior mechanical properties, K. Tu, B. Puértolas, M. Adobes-Vidal, Y. Wang, J. Sun, J. Traber, I. Burgert, J. Pérez-Ramírez, T. Keplinger, *Adv. Sci.* **2020**, 7, 1902897 (doi:10.1002/advs.201902897, back cover)

CO_2-promoted catalytic process forming higher alcohols with tunable nature at record productivity, H.T. Luk, G. Novak, O.V. Safonova, S. Siol, J.A. Stewart, D. Curulla Ferré, C. Mondelli, J. Pérez-Ramírez, *ChemCatChem* **2020**, in press (doi:10.1002/cctc.202000059, front cover)

Operando photoelectron photoion coincidence spectroscopy unravels mechanistic fingerprints of propane activation by catalytic oxyhalogenation, G. Zichittella, P. Hemberger, F. Holzmeier, A. Bodi, J. Pérez-Ramírez, *J. Phys. Chem. Lett.* **2020**, 2020, 11, 856-863 (doi:10.1021/acs.jpclett.9b03836)

Nitrogen-doped carbons with hierarchical porosity via chemical blowing towards long-lived metal-free catalysts for acetylene hydrochlorination, S.K. Kaiser, K.S. Song, S. Mitchell, A. Coskun, J. Pérez Ramírez, *ChemCatChem* **2020**, 12, 1922-1925 (doi:10.1002/cctc.201902331, front cover)

Role of zirconia carrier on indium oxide-catalyzed CO_2 hydrogenation to methanol, M.S. Frei, C. Mondelli, A. Cesarini, F. Krumeich, R. Hauert, J.A. Stewart, D. Curulla Ferre, J. Pérez-Ramírez, *ACS Catal.* **2020**, 10, 1133-1145 (doi:10.1021/acscatal.9b03305)

Aluminum redistribution in ZSM-5 zeolite upon interaction with gaseous halogens and hydrogen halides and implications in catalysis, V. Paunović, S. Mitchell, R. Verel, S.S. Lee, J. Pérez-Ramírez, *J. Phys. Chem. C* **2020**, 1, 722-733 (doi:10.1021/acs.jpcc.9b09984)

Dual catalyst system for selective vinyl chloride production via ethene oxychlorination, M. Scharfe, V. Paunović, S. Mitchell, R. Hauert, S. Xi, A. Borgna, J. Pérez-Ramírez, *Catal. Sci. Technol.* **2020**, 10, 560-575 (doi:10.1039/C9CY01801H)

Ceria in halogen chemistry, M. Scharfe, G. Zichittella, V. Paunović, J. Pérez-Ramírez, *Chin. J. Catal.* **2020**, 41, 915-927 (doi:S1872-2067(19)63528-X)

Epitaxially-directed iridium nanostructures on titanium dioxide for the selective hydrodechlorination of dichloromethane, A.J. Saadun, G. Zichittella, V. Paunović, B.A. Markaide-Aiastui, S. Mitchell, J. Pérez-Ramírez, *ACS Catal.* **2020**, 10, 528-542 (doi:10.1021/acscatal.9b04467)

Cascade deoxygenation process integrating acid and base catalysts for the efficient production of second-generation biofuels, H. Hernando, B. Puértolas, P. Pizarro, J. Fermoso, J. Pérez-Ramírez, D.P. Serrano, *ACS Sustainable Chem. Eng.* **2019**, 7, 18027-18037 (doi:10.1021/acssuschemeng.9b04921)

The volcano trend in electrocatalytic CO_2 reduction activity over atomically-dispersed metal sites on nitrogen-doped carbon, J. Li, P. Prslja, T. Shinagawa, A.J. Martin, F. Krumeich, K. Artyushkova, P. Atanassov, A. Zitolo, Y. Zhou, R. García-Muelas, N. López, J. Pérez-Ramírez, F. Jaouen, *ACS Catal.* **2019**, 9, 10426-10439 (doi:10.1021/acscatal.9b02594)

Plant-to-planet analysis of CO_2-based methanol processes, A. González-Garay, M.S. Frei, A. Al-Qahtani, C. Mondelli, G. Guillén-Gosálbez, J. Pérez-Ramírez, *Energy Environ. Sci.* **2019**, 12, 3425-3436 (doi:10.1039/C9EE01673B, inside back cover)

Strategies to break linear scaling relationships, N. López, J. Pérez-Ramírez, *Nat. Catal.* **2019**, 2, 971-976 (doi:10.1038/s41929-019-0376-6)

Transforming energy with single-atom catalysts, S. Ding, M.J. Hülsey, J. Pérez-Ramírez, N. Yan, *Joule* **2019**, 3, 2897-2929 (doi:10.1016/j.joule.2019.09.015)

Heading to distributed electrocatalytic conversion of small abundant molecules into fuels, chemicals, and fertilizers, A.J. Martín, J. Pérez-Ramírez, *Joule* **2019**, 3, 2602-2621 (doi:10.1016/j.joule.2019.09.007)

Mechanistic insights into the ceria-catalyzed synthesis of carbamates as polyurethane precursors, B. Puértolas, M. Rellán-Piñeiro, J.L. Núñez-Rico, A.P. Amrute, A. Vidal-Ferran, N. Lopez, J. Pérez-Ramírez, S. Wershofen, *ACS Catal.* **2019**, 9, 7708-7720 (doi:10.1021/acscatal.9b02086)

Mechanistic origin of the diverging selectivity patterns in catalyzed ethane and ethene oxychlorination, M. Scharfe, G. Zichittella, V.A. Kondratenko, E.V. Kondratenko, N. López, J. Pérez-Ramírez, *J. Catal.* **2019**, 377, 233-244 (doi:10.1016/j.jcat.2019.07.021)

Preparation of highly active phosphated TiO_2 catalysts via continuous sol-gel synthesis in a microreactor, O. Martin, N. Bolzli, B. Puértolas, J. Pérez-Ramírez, P. Riedlberger, *Catal. Sci. Technol.* **2019**, 9, 4744-4758 (doi:10.1039/c8cy02574f)

Alkane functionalization via catalytic oxychlorination: performance as a function of the carbon number, G. Zichittella, J. Lüthi, V. Paunović, J. Pérez-Ramírez, *Energy Technol.* **2019**, in press (doi:10.1002/ente.201900622)

Preserved in a shell: High-performance graphene-confined ruthenium nanoparticles in acetylene hydrochlorination, S.K. Kaiser, R. Lin, F. Krumeich, O.V. Safonova, J. Pérez-Ramírez, *Angew. Chem. Int. Ed.* **2019**, 58, 12297-12304 (doi:10.1002/anie.201906916); *Angew. Chem.* **2019**, 131, 12425-12432 (doi:10.1002/ange.201906916)

Atomic-scale engineering of indium oxide promotion by palladium for methanol production via CO_2 hydrogenation, M.S. Frei, C. Mondelli, R. Garcia-Muelas, K.S. Kley, B. Puértolas, N. López, O. Safonova, J.A. Stewart, D. Curulla Ferré, J. Pérez-Ramírez, *Nat. Commun.* **2019**, 10:3377 (doi:10.1038/s41467-019-11349-9)

Nitride-derived copper modified with indium as a selective and highly stable catalyst for the electroreduction of carbon dioxide, F.L.P. Veenstra, A.J. Martín, J. Pérez-Ramírez, *ChemSusChem* **2019**, 12, 3501-3508 (doi:10.1002/cssc.201901309, very important paper, cover feature)

Catalytic halogenation of methane: a dream reaction with practical scope?, V. Paunović, J. Pérez-Ramírez, *Catal. Sci. Technol.* **2019**, 9, 4515-4530 (doi:10.1039/C9CY00625G, hot article, outside front cover)

Selective propylene production via propane oxychlorination on metal phosphate catalysts, G. Zichittella, S. Stähelin, F. Goedicke, J. Pérez-Ramírez, *ACS Catal.* **2019**, 9, 5772-5782 (doi:10.1021/acscatal.9b01315)

Tailoring nitrogen-doped carbons as hosts for single-atom catalysts, S. Büchele, Z. Chen, S. Mitchell, R. Hauert, F. Krumeich, J. Pérez-Ramírez, *ChemCatChem* **2019**, 11, 2812-2820 (doi:10.1002/cctc.201900547)

Atom-by-atom resolution of structure-function relations over low-nuclearity metal catalysts, E. Vorobyeva, E. Fako, Z. Chen, S.M. Collins, D. Johnstone, P.A. Midgley, R. Hauert, O.V. Safonova, G. Vilé, N. López, S. Mitchell, J. Pérez-Ramírez, *Angew. Chem. Int. Ed.* **2019**, 58, 8724-8729 (doi:10.1002/anie.201902136, hot paper, highlighted in ChemViews); *Angew. Chem.* **2019**, 131, 8816-8821 (doi:10.1002/ange.201902136)

Sustainable continuous flow valorization of γ-valerolactone with trioxane to α-methylene-γ-valerolactone over basic beta zeolite, M. Al-Naji, B. Puértola, B. Kumru, D. Cruz, M. Bäumel, B.V.K.J. Schmidt, N.V. Tarakina, J. Pérez-Ramírez, *ChemSusChem* **2019**, 12, 2628-2636 (doi:10.1002/cssc.201900418, cover feature)

Kinetics of ceria-catalysed ethene oxychlorination, Z. Vajglova, R. Hemery, N. Kumar, K. Eränen, M. Peurla, J. Peltonen, J. Wärnå, J. Pérez-Ramírez, T. Salmi, D. Yu. Murzin, *J. Catal.* **2019**, 372, 287-298 (10.1016/j.jcat.2019.03.009)

Impact of carrier acidity on the conversion of syngas to higher alcohols over zeolite-supported copper-iron catalysts, H.T. Luk, C. Mondelli, S. Mitchell, D. Curulla Ferré, J.A. Stewart, J. Pérez-Ramírez, *J. Catal.* **2019**, 371, 116-125 (doi:10.1016/j.jcat.2019.01.021)

Tunability and scalability of single-atom catalysts based on carbon nitride, Z. Chen, S. Mitchell, F. Krumeich, R. Hauert, S. Yakunin, M.V. Kovalenko, J. Pérez-Ramírez, *ACS Sustainable Chem. Eng.* **2019**, 7, 5223-5230 (doi:10.1021/acssuschemeng.8b06148, front cover)

Halogen-dependent surface confinement governs selective alkane functionalization to olefins, G. Zichittella, M. Scharfe, B. Puértolas, V. Paunović, P. Hemberger, A. Bodi, L. Szentmiklósi, N. López, J. Pérez-Ramírez, *Angew. Chem. Int. Ed.* **2019**, 58, 5877-5881 (doi:10.1002/anie.201811669, hot paper, front cover, highlighted in ChemViews); *Angew. Chem.* **2019**, 131, 5935-5940 (doi:10.1002/ange.201811669)

Selective methane functionalization via oxyhalogenation over supported noble metal nanoparticles, V. Paunović, G. Zichittella, P. Hemberger, A. Bodi, J. Pérez-Ramírez, *ACS Catal.* **2019**, 9, 1710-1725 (doi:10.1021/acscatal.8b04375)

Controlling the speciation and reactivity of carbon-supported gold nanostructures for catalysed acetylene hydrochlorination, S. Kaiser, R. Lin, S. Mitchell, E. Fako, F. Krumeich, R. Hauert, O.V. Safonova, V.A. Kondratenko, E.V. Kondratenko, S.M. Collins, P.A. Midgley, N. López, J. Pérez-Ramírez, *Chem. Sci.* **2019**, 10, 359-369 (doi:10.1039/C8SC03186J)

Design of single gold atoms on nitrogen-doped carbon for molecular recognition in alkyne semi-hydrogenation, R. Lin, D. Albani, E. Fako, S.K. Kaiser, O.V. Safonova, N. López, J. Pérez-Ramírez, *Angew. Chem. Int. Ed.* **2019**, 58, 504-509 (doi:10.1002/anie.201805820); *Angew. Chem.* **2019**, 131, 514-519 (doi:10.1002/ange.201805820, front cover, hot paper)

Ensemble design in nickel phosphide catalysts for alkyne semi-hydrogenation, D. Albani, K. Karajovic, B. Tata, Q. Li, S. Mitchell, N. López, J. Pérez-Ramírez, *ChemCatChem* **2019**, 11, 457-464 (doi:10.1002/cctc.201801430, cover feature)

Electrocatalytic reduction of nitrogen: from Haber-Bosch to ammonia artificial leaf, A.J. Martín, T. Shinagawa, J. Pérez-Ramírez, *Chem* **2019**, 5, 263-283 (doi:10.1016/j.chempr.2018.10.010)

Origin of the selective electroreduction of carbon dioxide to formate by chalcogen modified copper, R. García-Muelas, F. Dattila, T. Shinagawa, A.J. Martín, J. Pérez-Ramírez, N. López, *J. Phys. Chem. Lett.* **2018**, 9, 7153-7159 (doi:10.1021/acs.jpclett.8b03212)

Techno-economic analysis of a glycerol biorefinery, S. D'Angelo, A. Dall'Ara, C. Mondelli, J. Pérez-Ramírez, S. Papadokonstantakis, *ACS Sustainable Chem. Eng.* **2018**, 6, 16563-16572 (doi:10.1021/acssuschemeng.8b03770)

Hydrotalcite-derived mixed oxides for the synthesis of a key vitamin A intermediate reducing waste, F.J.A.G. Coumans, S. Mitchell, J. Schütz, J. Medlock, J. Pérez Ramírez, *ACS Omega* **2018**, 3, 15293-15301 (doi:10.1021/acsomega.8b02234)

Role of carbonaceous supports and potassium promoter on higher alcohols synthesis over copper-iron catalysts, H.T. Luk, C. Mondelli, S. Mitchell, S. Siol, J.A. Stewart, D. Curulla Ferre, J. Pérez-Ramírez, *ACS Catal.* **2018**, 8, 9604-9618 (doi:10.1021/acscatal.8b02714)

Shedding new light on nanostructured catalysts with positron annihilation spectroscopy, S. Mitchell, L. Gerchow, R. Warringham, P. Crivelli, J. Pérez-Ramírez, *Small Methods* **2018**, 1800268 (doi:10.1002/smtd.201800268, back cover)

The multifaceted reactivity of single-atom heterogeneous catalysts, S. Mitchell, E. Vorobyeva, J. Pérez-Ramírez, *Angew. Chem. Int. Ed.* **2018**, 57, 15316-15329 (doi:10.1002/anie.201806936, frontispiece; *Angew. Chem.* **2018**, 130, 15538-15552 (doi:10.1002/ange.201806936)

Enhanced base-free formic acid production from CO_2 on Pd/g-C_3N_4 by tuning of the carrier defects, C. Mondelli, B. Puértolas, M. Ackermann, Z. Chen, J. Pérez-Ramírez, *ChemSusChem* **2018**, 11, 2859-2869 (doi:10.1002/cssc.201801362, front cover, very important paper)

Selective ensembles in supported palladium sulfide nanoparticles for alkyne semi-hydrogenation, D. Albani, M. Shahrokhi, Z. Chen, S. Mitchell, R. Hauert, N. López, J. Pérez Ramírez, *Nat. Commun.* **2018**, 9:2634 (doi:10.1038/s41467-018-05052-4)

A heterogeneous single-atom palladium catalyst surpassing homogeneous systems for Suzuki coupling, Z. Chen, E. Vorobyeva, S. Mitchell, E. Fako, M.A. Ortuño, N. López, S.M. Collins, P.A. Midgley, S. Richard, G. Vilé, J. Pérez-Ramírez, *Nat. Nanotechnol.* **2018**, 13, 702-707 (doi:10.1038/s41565-018-0167-2, highlighted in ETH News and C&EN)

Structure-performance descriptors and the role of Lewis acidity in the methanol-to-propylene process, I. Yarulina, S. Bailleul, K. De Wispelaere, J. Goetze, M. Radersma, E. Abou-Hamad, I. Vollmer, M. Goesten, B. Mezari, E.J.M. Hensen, J.S. Martínez-Espín, M. Morten, S. Mitchell, J. Pérez-Ramírez, U. Olsbye, B.M. Weckhuysen, V. Van Speybroeck, F. Kapteijn, J. Gascon, *Nat. Chem.* **2018**, 10, 804-812 (doi: 10.1038/s41557-018-0081-0, front cover)

Single-atom heterogeneous catalysts based on distinct carbon nitride scaffolds, Z. Chen, E. Vorobyeva, S. Mitchell, E. Fako, N. López, S.M. Collins, R.K. Leary, P.A. Midgley, R. Hauert, J. Pérez-Ramírez, *Natl. Sci. Rev.* **2018**, in press (doi:10.1093/nsr/nwy048, highlighted by the WeChat platform cailiaoren, Eurekalert, Nanowerk News, and Science Newsline)

Evidence of radical chemistry in catalytic methane oxybromination, V. Paunović, P. Hemberger, A. Bodi, N. López, J. Pérez Ramírez, *Nat. Catal.* **2018**, 1, 363-370 (doi:10.1038/s41929-018-0071-z)

Lanthanum vanadate catalysts for selective and stable methane oxybromination, V. Paunović, M. Artusi, R. Verel, F. Krumeich, R. Hauert, J. Pérez-Ramírez, *J. Catal.* **2018**, 363, 69-80 (doi:10.1016/j.jcat.2018.04.001)

Halogen type as a selectivity switch in catalysed alkane oxyhalogenation, G. Zichittella, B. Puértolas, V. Paunović, T. Block, R. Pöttgen, J. Pérez Ramírez, *Catal. Sci. Technol.* **2018**, 8, 2231-2243 (doi:10.1039/C8CY00122G)

Microfabricated electrodes unravel the role of interfaces in multicomponent CO_2 reduction catalysts, G.O. Larrazábal, T. Shinagawa, A.J. Martín, J. Pérez-Ramírez, *Nat. Commun*. **2018**, 9:1477 (doi:10.1038/s41467-018-03980-9, highlighted in C&EN)

Mechanism and microkinetics of methanol synthesis via CO_2 hydrogenation on indium oxide, M.S Frei, M. Capdevila-Cortada, R. García-Muelas, C. Mondelli, N. López, J.A. Stewart, D. Curulla-Ferré, J. Pérez-Ramírez, *J. Catal*. **2018**, 361, 313-321 (doi:10.1016/j.jcat.2018.03.014)

Environmental and economical perspectives of a glycerol biorefinery, G.M. Lari, G. Pastore, M. Haus, Y. Ding, S. Papodokanstantakis, C. Mondelli, J. Pérez-Ramírez, *Energy Environ. Sci.* **2018**, 11, 1012-1029 (doi:10.1039/C7EE03116E, inside front cover)

Mechanism of ethylene oxychlorination on ceria, M. Scharfe, M. Capdevila-Cortada, V.A. Kondratenko, E.V. Kondratenko, S. Colussi, A. Trovarelli, N. López, J. Pérez-Ramírez, *ACS Catal.* **2018**, 8, 2651-2663 (doi:10.1021/acscatal.7b04431)

Acidity effects in positron annihilation lifetime spectroscopy of zeolites, R. Warringham, L. Gerchow, D. Cooke, P. Crivelli, R. Vallery, S. Mitchell, J. Pérez-Ramírez, *J. Phys. Chem. C* **2018**, 122, 3443-3453 (doi:10.1021/acs.jpcc.7b11336)

Descriptors for high-performance nitrogen-doped carbon catalysts in acetylene hydrochlorination, R. Lin, S.K. Kaiser, R. Hauert, J. Pérez-Ramírez, *ACS Catal.* **2018**, 8, 1114-1121 (doi:10.1021/acscatal.7b03031)

Sulfur-modified copper catalysts for the electrochemical reduction of carbon dioxide to formate, T. Shinagawa, G.O. Larrazábal, A.J. Martín, F. Krumeich, J. Pérez-Ramírez, *ACS Catal.* **2018**, 8, 837-844 (doi:10.1021/acscatal.7b03161)

Activated TiC-SiC composite for natural gas upgrading via catalytic oxyhalogenation, G. Zichittella, B. Puértolas, S. Siol, V. Paunović, S. Mitchell, J. Pérez-Ramírez, *ChemCatChem* **2018**, 10, 1282-1290 (doi:10.1002/cctc.201701632, cover feature)

Selective methane oxybromination over nanostructured ceria catalysts, V. Paunović, G. Zichittella, S. Mitchell, R. Hauert, J. Pérez-Ramírez, *ACS Catal.* **2018**, 8, 291-303 (doi:10.1021/acscatal.7b03074)

Elucidating the distribution and speciation of boron and cesium in BCsX zeolite catalysts for styrene production, A.J. Martín, S. Mitchell, O. Scholder, R. Verel, R. Hauert, L. Bernard, C. Jensen, M. Schwefer, J. Pérez-Ramírez, *ChemPhysChem* **2018**, 19, 437-445 (doi:10.1002/cphc.201701086)

Carbon nanofibres-supported KCoMo catalysts for syngas conversion into higher alcohols, H.T. Luk, T. Forster, C. Mondelli, S. Siol, D. Curulla Ferré, J. A. Stewart, J. Pérez-Ramírez, *Catal. Sci. Technol.* **2018**, 8, 187-200 (doi:10.1039/C7CY01908D)

Towards a green manufacture of epichlorohydrin from glycerol using hydrotalcite-derived basic oxides, G.M. Lari, G. Pastore, C. Mondelli, J. Pérez-Ramírez, *Green Chem.* **2018**, 20, 148-159 (doi:10.1039/C7GC02610B, outside front cover)

Determining bio-oil composition via chemometric tools based on infrared spectroscopy, T. García, A. Veses, J.M. López, B. Puértolas, J. Pérez-Ramírez, M.S. Callén, *ACS Sustain. Chem. Eng.* **2017**, 5, 8710–8719 (doi:10.1021/acssuschemeng.7b01483)

The building blocks for high performance in electrocatalytic CO_2 reduction: materials, optimization strategies, and device engineering, G.O. Larrazábal, A.J. Martín, J. Pérez-Ramírez, *J. Phys. Chem. Lett.* **2017**, 8, 3933-3944 (doi:10.1021/acs.jpclett.7b01380)

Olefins from natural gas via oxychlorination catalysis, G. Zichittella, N. Aellen, V. Paunović, A.P. Amrute, J. Pérez-Ramírez, *Angew. Chem. Int. Ed.* **2017**, 56, 13670-13674 (doi:10.1002/anie.201706624, hot paper, inside back cover); *Angew. Chem.* **2017**, 129, 13858-13862 (doi:10.1002/ange.201706624)

Mechanism of ethylene oxychlorination over ruthenium oxide, M.D. Higham, M. Scharfe, M. Capdevila-Cortada, J. Pérez-Ramírez, N. López, *J. Catal.* **2017**, 353, 171-180 (doi:10.1016/j.jcat.2017.07.013)

Semi-hydrogenation of acetylene on indium oxide: proposed single ensemble catalysis, D. Albani, M. Capdevila-Cortada, G. Vilé, S. Mitchell, O. Martin, N. López, J. Pérez-Ramírez, *Angew. Chem. Int. Ed.* **2017**, 56, 10755-10760 (doi:10.1002/anie.201704999); *Angew. Chem.* **2017**, 129, 10895-10900 (doi:10.1002/ange.201704999)

Tailoring the framework composition of carbon nitride to improve the catalytic efficiency of the stabilised palladium atoms, E. Vorobyeva, Z. Chen, S. Mitchell, R. K. Leary, P. Midgley, J. M. Thomas, R. Hauert, E. Fako, N. López, J. Pérez-Ramírez, *J. Mater. Chem. A* **2017**, 5, 16393-16403 (doi:10.1039/C7TA04607C)

Visualising compositional heterogeneity during the scale up of multicomponent zeolite bodies, A.J. Martin, S. Mitchell, K. Kunze, K.C. Weston, J. Pérez-Ramírez, *Mater. Horiz.* **2017**, 4, 857-861 (doi:10.1039/C7MH00088J, inside front cover)

Europium oxybromide catalysts for efficient bromine looping in natural gas valorization, V. Paunović, R. Lin, M. Scharfe, A.P. Amrute, S. Mitchell, R. Hauert, J. Pérez-Ramírez, *Angew. Chem. Int. Ed.* **2017**, 56, 9791-9795 (doi:10.1002/anie.201704406); *Angew. Chem.* **2017**, 129, 9923-9927 (doi:10.1002/ange.201704406)

Operando spectroscopy of the gas-phase aldol condensation of propanal over solid base catalysts, A.M. Hernández-Giménez, J. Ruiz-Martínez, B. Puértolas, J. Pérez-Ramírez, P.C.A. Bruijnincx, B.M. Weckhuysen, *Top. Catal.* **2017**, 60, 1522-1536 (doi:10.1007/s11244-017-0836-7)

Design of a technical Mg-Al mixed oxide catalyst for the continuous manufacture of glycerol carbonate, G.M. Lari, A.B.L. de Moura, L. Weimann, S. Mitchell, C. Mondelli, J. Pérez-Ramírez, *J. Mater. Chem. A* **2017**, 5, 16200-16211 (doi:10.1039/C7TA02061A)

Mapping the birth and evolution of pores upon thermal activation of layered hydroxides, R. Warringham, S. Mitchell, R. Murty, R. Schaeublin, P. Crivelli, J. Kenvin, J. Pérez-Ramírez, *Chem. Mater.* **2017**, 29, 4052-4062 (doi:10.1021/acs.chemmater.7b00734, front cover)

On the influence of Si:Al ratio and hierarchical porosity of FAU zeolites in solid acid catalysed esterification pretreatment of bio-oil, A. Osatiashtiani, B. Puértolas, C. Olivera, J.C. Manayil, B. Barbero, M. Isaacs, J. Pérez-Ramírez, E. Heracleous, A.F. Lee, K. Wilson, *Biomass Convers. Biorefin.* **2017**, 7, 331-342 (doi:10.1007/s13399-017-0254-x)

Advanced kinetic models through mechanistic understanding: population balances for methylenedianiline synthesis, M.O. Haus, T.C. Keller, J. Arras, J. Pérez-Ramírez, *Chem. Eng. Sci.* **2017**, 167, 317-326 (doi:10.1016/j.ces.2017.02.008)

Catalytic oxychlorination versus oxybromination for methane functionalization, G. Zichittella, V. Paunović, A.P. Amrute, J. Pérez-Ramírez, *ACS Catal.* **2017**, 7, 1805-1817 (doi:10.1021/acscatal.6b03600)

Halogen-mediated conversion of hydrocarbons to commodities, R. Lin, A.P. Amrute, J. Pérez-Ramírez, *Chem. Rev.* **2017**, 117, 4185-4247 (doi:10.1021/acs.chemrev.6b00551, front cover)

Bifunctional hierarchical zeolite-supported silver catalysts for the conversion of glycerol to allyl alcohol, G.M. Lari, Z. Chen, C. Mondelli, J. Pérez-Ramírez, *ChemCatChem* **2017**, 9, 2195–2202 (doi:10.1002/cctc.201601635)

Status and prospects in higher alcohols synthesis from syngas, H.T. Luk, C. Mondelli, D. Curulla-Ferré, J.A. Stewart, J. Pérez-Ramírez, *Chem. Soc. Rev.* **2017**, 46, 1358-1426 (doi:10.1039/c6cs00324a, inside front cover)

Pore topology effects in positron annihilation spectroscopy of zeolites, A. Zubiaga, R. Warringham, S. Mitchell, L. Gerchow, D. Cooke, P. Crivelli, J. Pérez-Ramírez, *ChemPhysChem* **2017**, 18, 470-479 (doi:10.1002/cphc.201601258, front cover)

Stabilization of single metal atoms on graphitic carbon nitride, Z. Chen, S. Mitchell, E. Vorobyeva, R.K. Leary, R. Hauert, T. Furnival, Q.M. Ramasse, J.M. Thomas, P.A. Midgley, D. Dontsova, M. Antonietti, S. Pogodin, N. López, J. Pérez-Ramírez, *Adv. Funct. Mater.* **2017**, 27, 1605785 (doi:10.1002/adfm.201605785, frontispiece)

Solvothermally-prepared Cu_2O electrocatalysts for CO_2 reduction with tunable selectivity by the introduction of p-block elements, G.O. Larrazábal, A.J. Martín, F. Krumeich, R. Hauert, J. Pérez-Ramírez, *ChemSusChem* **2017**, 10, 1255-1265 (doi:10.1002/cssc.201601578)

Hybrid palladium nanoparticles for direct H_2O_2 synthesis: the key role of the ligand, G.M. Lari, B. Puértolas, M. Shahrokhi, N. López, J. Pérez-Ramírez, *Angew. Chem. Int. Ed.* **2017**, 56, 1775-1779 (doi:10.1002/anie.201610552, hot paper, front cover); *Angew. Chem.* **2017**, 129, 1801-1805 (doi:10.1002/ange.201610552)

Interfacial acidity in ligand-modified ruthenium nanoparticles boosts the performance for the continuous hydrogenation of levulinic acid to gamma-valerolactone, D. Albani, Q. Li, G. Vilé, S. Mitchell, N. Almora-Barrios, P.T. Witte, N. López, J. Pérez-Ramírez, *Green Chem.* **2017**, 19, 2361-2370 (doi:10.1039/C6GC02586B, front cover)

Engineering of ZSM-5 zeolite crystals for enhanced lifetime in the production of light olefins via 2-methyl-2-butene cracking, S. Mitchell, M. Boltz, J. Liu, J. Pérez-Ramírez, *Catal. Sci. Technol.* **2017**, 7, 64-74 (doi:10.1039/C6CY01009A, inside front cover, hot article)

Electrochemical effects at surfactant-Pt nanoparticle interfaces boost catalytic performance, N. Almora-Barrios, G. Vilé, M. García-Ratés, J. Pérez-Ramírez, N. López, *ChemCatChem* **2017**, 9, 604-609 (doi:10.1002/cctc.201601134)

Platform chemicals via zeolite-catalyzed fast pyrolysis of glucose, B. Puértolas, Q. Imtiaz, C.R. Müller, J. Pérez-Ramírez, *ChemCatChem* **2017**, 9, 1579-1582 (doi:10.1002/cctc.201601052)

Selective production of carbon monoxide via methane oxychlorination over vanadyl pyrophosphate, V. Paunović, G. Zichittella, R. Verel, A.P. Amrute, J. Pérez-Ramírez, *Angew. Chem. Int. Ed.* **2016**, 55, 15619-15623 (doi:10.1002/anie.201608165, hot paper, inside back cover, highlighted twice in *Chemistry Views*); *Angew. Chem.* **2016**, 128, 15848-15852 (doi:10.1002/ange.201608165)

Lanthanide compounds as catalysts for the one-step synthesis of vinyl chloride from ethylene, M. Scharfe, P.A. Lira-Parada, A.P. Amrute, S. Mitchell, J. Pérez-Ramírez, *J. Catal.* **2016**, 344, 524-534 (doi:10.1016/j.jcat.2016.10.026)

Insights into the mechanism of zeolite detemplation by positron annihilation lifetime spectroscopy, R. Warringham, L. Gerchow, A. Zubiaga, D. Cooke, P. Crivelli, S. Mitchell, J. Pérez-Ramírez, *J. Phys. Chem. C* **2016**, 120, 25451-25461 (doi:10.1021/acs.jpcc.6b08931)

Catalyst and process design for the continuous manufacture of rare sugar alcohols by epimerization-hydrogenation of aldoses, G.M. Lari, O.G. Gröninger, Q. Li, C. Mondelli, N. López, J. Pérez-Ramírez, *ChemSusChem* **2016**, 9, 3407-3418 (doi:10.1002/cssc.201600755, front cover)

Synthesis-property-performance relationships of amorphous silica-alumina catalysts for the production of methylenedianiline and higher homologues, T.C. Keller, J. Arras, M.O. Haus, R. Hauert, A. Kenvin, J. Kenvin, J. Pérez-Ramírez, *J. Catal.* **2016**, 344, 757-767 (doi:10.1016/j.jcat.2016.08.016)

Enhanced reduction of CO_2 to CO over Cu-In electrocatalysts: catalyst evolution is the key, G.O. Larrazábal, A.J. Martín, S. Mitchell, R. Hauert, J Pérez-Ramírez, *ACS Catal.* **2016**, 6, 6265-6274 (doi:10.1021/acscatal.6b02067)

Structuring hybrid palladium nanoparticles in metallic monolithic reactors for continuous-flow three-phase alkyne hydrogenation, D. Albani, G. Vilé, M.A. Beltran Toro, R. Kaufmann, S. Mitchell, J. Pérez-Ramírez, *React. Chem. Eng.* **2016**, 1, 454-462 (doi:10.1039/c6re00114a)

Operando synchrotron X-ray powder diffraction and modulated-excitation infrared spectroscopy elucidate the CO_2 promotion on a commercial methanol synthesis catalyst, O. Martin, C. Mondelli, A. Cervellino, D. Ferri, D. Curulla-Ferré, J. Pérez-Ramírez, *Angew. Chem. Int. Ed.* **2016**, 55, 11031-11036 (doi:10.1002/anie.201603204); *Angew. Chem.* **2016**, 128, 11197-11202 (doi:10.1002/ange.201603204)

Mechanochemically activated CaO-based MgO-stabilized CO_2 sorbents: Highly effective materials prepared via a scalable technique, A. Kurlov, M. Broda, D. Hosseini, S. Mitchell, J. Pérez-Ramírez, C.R. Müller, *ChemSusChem* **2016**, 9, 2380-2390 (doi:10.1002/cssc.201600510)

Glycerol oxidehydration to pyruvaldehyde over silver-based catalysts for improved lactic acid production, G.M. Lari, R. García-Muelas, C. Mondelli, N. López, J. Pérez-Ramírez, *Green Chem.* **2016**, 18, 4682-4692 (doi:10.1039/C6GC00894A)

Structural analysis of IPC zeolites and related materials using positron annihilation spectroscopy and high-resolution argon adsorption, J. Jagiello, M. Sterling, P. Eliášová, M. Opanasenko, A. Zukal, R.E. Morris, M. Navaro, A. Mayoral, P. Crivelli, R. Warringham, S. Mitchell, J. Pérez-Ramírez, J. Čejka, *Phys. Chem. Chem. Phys.* **2016**, 18, 15269-15277 (doi:10.1039/c6cp01950a)

Quantifying the complex pore architecture of hierarchical faujasite zeolites and the impact on diffusion, J. Kenvin, S. Mitchell, M. Sterling, R. Warringham, T.C. Keller, P. Crivelli, J. Jagiello, J. Pérez-Ramírez, *Adv. Funct. Mater.* **2016**, 26, 5621-5630 (doi:10.1002/adfm.201601748, back cover)

Catalyst design for HBr-mediated natural gas upgrading via combined heterogeneous-homogeneous pathways, V. Paunović, G. Zichittella, M. Moser, A.P. Amrute, J. Pérez-Ramírez, *Nat. Chem.* **2016**, 8, 803-809 (doi:10.1038/nchem.2522)

Phase-controlled synthesis of iron phosphates via phosphation of β-FeOOH nanorods, R. Lin, A.P. Amrute, F. Krumeich, K. Lázár, R. Hauert, M. Yulikov, J. Pérez-Ramírez, *CrystEngComm* **2016**, 18, 3174-3185 (doi:10.1039/C6CE00501B, front cover)

Analysis of pore connectivity in hierarchical zeolites by positron annihilation lifetime spectroscopy: Impact of implantation profile, A. Zubiaga, R. Warringham, M. Boltz, D. Cooke, P. Crivelli, D. Gidley, J. Pérez-Ramírez, S. Mitchell, *Phys. Chem. Chem. Phys.* **2016**, 18, 9211-9219 (doi:10.1039/C6CP00408C)

Indium oxide as a superior catalyst for methanol synthesis via CO_2 hydrogenation, O. Martin, A.J. Martín, C. Mondelli, S. Mitchell, T.F. Segawa, R. Hauert, C. Drouilly, D. Curulla-Ferré, J. Pérez-Ramírez, *Angew. Chem. Int. Ed.* **2016**, 55, 6261-6265 (doi:10.1002/anie.201600943, front cover, highlighted in *C&EN*); Angew. Chem. 2016, 128, 6369-6373 (doi:10.1002/ange.201600943)

Hierarchical NaY zeolites for lactic acid dehydration to acrylic acid, G.M. Lari, B. Puértolas, M.S. Frei, C. Mondelli, J. Pérez-Ramírez, *ChemCatChem* **2016**, 8, 1507-1514 (doi:10.1002/cctc.201600102, inside back cover, highlighted in *ChemistryViews*)

Reactivity descriptors for ceria in catalysis, M. Capdevila-Cortada, G. Vilé, D. Teschner, J. Pérez-Ramírez, N. López, *Appl. Catal., B* **2016**, 197, 299-312 (doi:10.1016/j.apcatb.2016.02.035)

Impact of daily startup-shutdown conditions on the production of solar methanol over a commercial Cu-ZnO-Al_2O_3 catalyst, U. Ash-Kurlander, O. Martin, L.D. Fontana, V.R. Patil, M. Bernegger, C. Mondelli, J. Pérez-Ramírez, A. Steinfeld, *Energy Technol.* **2016**, 4, 565-572 (doi:10.1002/ente.201600022, front cover)

Understanding the structure of cationic sites in alkali metal-grafted USY zeolites, T.C. Keller, M. Položij, B. Puértolas, H.V. Thang, P. Nachtigall, J. Pérez-Ramírez, , *J. Phys. Chem. C* **2016**, 120, 4954-4960 (doi:10.1021/acs.jpcc.5b12413)

Merging single atom dispersed silver and carbon nitride to a joint electronic system via co-polymerization with silver tricyanomethanide, Z. Chen, S. Pronkin, T. Fellinger, K. Kailasam, G. Vilé, D. Albani, F. Krumeich, R. Leary, J. Barnard, J.M. Thomas, J. Pérez-Ramírez, M. Antonietti, D. Dontsova, *ACS Nano* **2016**, 10, 3166-3175 (doi:10.1021/acsnano.5b04210)

Selective dehydrogenation of bioethanol to acetaldehyde over basic USY zeolites, G.M. Lari, K. Desai, C. Mondelli, J. Pérez-Ramírez, *Catal. Sci. Technol.* **2016**, 6, 2706-2714 (doi:10.1039/C5CY02020D)

Interplay between surface chemistry and performance on rutile-type catalysts for halogen production, M. Moser, V. Paunović, Z. Guo, L. Szentmiklósi, M.G. Hevia, M. Higham, N. López, D. Teschner, J. Pérez-Ramírez, *Chem. Sci.* **2016**, 7, 2996-3005 (doi:10.1039/C5SC04247J, inside front cover)

Oxychlorination-dehydrochlorination chemistry on bifunctional ceria catalysts for intensified vinyl chloride production, M. Scharfe, P.A. Lira-Parada, V. Paunović, M. Moser, A.P. Amrute, J. Pérez-Ramírez, *Angew. Chem. Int. Ed.* **2016**, 55, 3068-3072 (doi:10.1002/anie.201510903); *Angew. Chem.* **2016**, 128, 3120-3124 (doi:10.1002/ange.201510903)

Synergistic effects in silver-indium electrocatalysts for carbon dioxide reduction, G.O. Larrazábal, A.J. Martín, S. Mitchell, R. Hauert, J. Perez-Ramirez, *J. Catal.* **2016**, 343, 266-277 (10.1021/acscatal.6b02067)

Advances in the design of nanostructured catalysts for selective hydrogenation, G. Vilé, D. Albani, N. Almora-Barrios, N. López, J. Pérez-Ramírez, *ChemCatChem* **2016**, 8, 21-23 (doi:10.1002/cctc.201501269)

Ligand ordering determines the catalytic response of hybrid palladium nanoparticles in hydrogenation, D. Albani, G. Vilé, S. Mitchell, P.T. Witte, N. Almora-Barrios, R. Verel, N. López, J. Pérez-Ramírez, *Catal. Sci. Technol.* **2016**, 6, 1621-1631 (doi:10.1039/C5CY01921D, front cover)

Alkaline-assisted stannation of beta zeolite as a scalable route to Lewis-acid catalysts for the valorisation of renewables, P.Y. Dapsens, C. Mondelli, J. Pérez-Ramírez, *New J. Chem.* **2016**, 40, 4136-4139 (doi:10.1039/c5cs00520e)

Environmental and economic assessment of glycerol oxidation to dihydroxyacetone over technical iron zeolite catalysts, G.M. Lari, C. Mondelli, S. Papadokonstantakis, M. Morales, K. Hungerbühler, J. Pérez-Ramírez, *React. Chem. Eng.* **2016**, 1, 106-118 (doi:10.1039/C5RE00090D)

Deoxygenation of bio-oil over solid base catalysts: from model to realistic feeds, B. Puértolas, T.C. Keller, S. Mitchell, J. Pérez-Ramírez, *Appl. Catal., B* **2016**, 184, 77-86 (doi:10.1016/j.apcatb.2015.11.017)

Deactivation mechanisms of tin-zeolites in biomass conversions, G.M. Lari, P.Y. Dapsens, D. Scholz, S. Mitchell, C. Mondelli, J. Pérez-Ramírez, *Green Chem.* **2016**, 1, 106-118 (doi:10.1039/C5GC02147B, inside cover)

Synthesis, characterisation, and catalytic evaluation of hierarchical faujasite zeolites: milestones, challenges, and future directions, D. Verboekend, N. Nuttens, R. Locus, P. Verolme, J.C. Groen, J. Pérez-Ramírez, B. F. Sels, *Chem. Soc. Rev.* **2016**, 45, 3331-3352 (doi:10.1039/c5cs00520e, front cover)

Immobilizing and de-immobilizing enzymes on mesoporous silica, V. Zlateski, T.C. Keller, J. Pérez-Ramírez, R.N. Grass, *RSC Adv.* **2015**, 5, 87706-87712 (doi:10.1039/C5RA19568C)

Towards sustainable fuels and chemicals through the electrochemical reduction of CO_2: lessons from water electrolysis, A.J. Martín, G.O. Larrazábal, J. Pérez-Ramírez, *Green Chem.* **2015**, 17, 5114-5130 (doi:10.1039/C5GC01893E, front cover)

Design of Lewis-acid centers in zeolite matrices for the conversion of renewables, P.Y. Dapsens, C. Mondelli, J. Pérez-Ramírez, *Chem. Soc. Rev.* **2015**, 44, 7025-2043 (doi:10.1039/c5cs00028a, front cover)

Structural analysis of hierarchically-organized zeolites, S. Mitchell, A.B. Pinar, J. Kenvin, P. Crivelli, J. Kärger, J. Pérez-Ramírez, *Nat. Commun.* **2015**, 6, 8633-8647 (doi:10.1038/ncomms9633)

Aluminum redistribution during the preparation of hierarchical zeolites by desilication, S. Mitchell, M. Milina, R. Verel, M. Hernández-Rodríguez, A.B. Pinar, L.B. McCusker, J. Pérez-Ramírez, *Chem. Eur. J.* **2015**, 21, 14156-14164 (doi:10.1002/chem.201500992)

Structure and reactivity of ceria-zirconia catalysts for bromine and chlorine production via the gas-phase oxidation of hydrogen halides, M. Moser, G. Vilé, S. Colussi, F. Krumeich, D. Teschner, L. Szentmiklósi, A. Trovarelli, J. Pérez-Ramírez, *J. Catal.* **2015**, 331, 128-137 (doi:10.1016/j.jcat.2015.08.024)

Zinc-rich copper catalysts promoted by gold for methanol synthesis, O. Martin, C. Mondelli, D. Curulla-Ferré, C. Drouilly, R. Hauert, J. Pérez-Ramírez, *ACS Catal.* **2015**, 5, 5607-5616 (doi:10.1021/acscatal.5b00877)

Design of base zeolite catalysts by alkali-metal grafting in alcoholic media, T.C. Keller, K. Desai, S. Mitchell, J. Pérez-Ramírez, *ACS Catal.* **2015**, 5, 5388-5396 (doi:10.1021/acscatal.5b00761)

Structure and reactivity of supported hybrid platinum nanoparticles for the flow hydrogenation of functionalized nitroaromatics, G. Vilé, N. Almora-Barrios, N. López, J. Pérez-Ramírez, *ACS Catal.* **2015**, 5, 3767-3778 (doi:10.1021/acscatal.5b00885)

Structure analysis of a BEC-type germanosilicate zeolite including the location of the flexible organic cations in the channels, S. Smeets, L. Koch, N. Mascello, J. Sesseg, L.B. McCusker, M. Hernández-Rodríguez, J. Pérez-Ramírez, *CrystEngComm* **2015**, 17, 4865-4870 (doi:10.1039/C5CE00731C)

Porosity-acidity interplay in hierarchical ZSM-5 zeolites for pyrolysis oil valorization to aromatics, B. Puértolas, A. Veses, M.S. Callén, S. Mitchell, T. García, J. Pérez-Ramírez, *ChemSusChem* **2015**, 12, 3283-3293 (doi:10.1002/cssc.201500685)

Hierarchically-structured MnO_2-Co/C nanocomposites: highly efficient and magnetically-recyclable catalysts for the aerobic oxidation of alcohols, J. Zhi, S. Mitchell, J. Pérez-Ramírez, O. Reiser, *ChemCatChem* **2015**, 7, 2585-2589 (doi:10.1002/cctc.201500549, inside cover)

A stable single-site palladium catalyst for hydrogenations, G. Vilé, D. Albani, M. Nachtegaal, Z. Chen, D. Dontsova, M. Antonietti, N. López, J. Pérez-Ramírez, *Angew. Chem. Int. Ed.* **2015**, 54, 11265-11269 (doi:10.1002/anie.201505073, front cover, highlighted in *Nature* and in *C&EN*); *Angew. Chem.* **2015**, 127, 11417-11422 (doi:10.1002/ange.201505073, front cover, highlighted in *Nature* and in *C&EN*)

Hemicellulose arabinogalactan hydrolytic hydrogenation over Ru-modified H-USY zeolites, D.Yu. Murzin, B. Kusema, E.V. Murzina, A. Aho, A. Tokarev, A.S. Boymirzaev, J. Wärnå, P.Y. Dapsens, C. Mondelli, J. Pérez-Ramírez, T. Salmi, *J. Catal.* **2015**, 330, 93-105 (doi:10.1016/j.jcat.2015.06.022)

Continuous transfer hydrogenation of sugars to alditols with bio-derived donors over Cu-Ni-Al catalysts, D. Scholz, C. Aellig, C. Mondelli, J. Pérez-Ramírez, *ChemCatChem* **2015**, 7, 1551-1558 (doi:10.1002/cctc.201403005, front cover)

When catalyst meets reactor: continuous biphasic processing of xylan to furfural over GaUSY/Amberlyst-36, C. Aellig, D. Scholz, P.Y. Dapsens, C. Mondelli, J. Pérez-Ramírez, *Catal. Sci. Technol.* **2015**, 5, 142-149 (doi:10.1039/C4CY00973H, front cover)

Gas-phase oxidation of glycerol to dihydroxyacetone over tailored iron zeolites, G.M. Lari, C. Mondelli, J. Pérez-Ramírez, *ACS Catal.* **2015**, 5, 1453-1461 (doi:10.1021/cs5019056)

Unified method to the total pore volume and pore size distribution of hierarchical zeolites from argon adsorption and mercury intrusion, J. Kenvin, J. Jagiello, S. Mitchell, J. Pérez-Ramírez, *Langmuir* **2015**, 31, 1242-1247 (doi:10.1021/la504575s)

Structuring zeolite bodies for enhanced heat-transfer properties, L. Borchardt, N.-L. Michels, T. Nowak, S. Mitchell, J. Pérez-Ramírez, *Microporous Mesoporous Mater.* **2015**, 208, 196-202 (doi:10.1016/j.micromeso.2015.01.028)

Environmental and economic assessment of lactic acid production from glycerol using cascade bio- and chemocatalysis, M. Morales, P.Y. Dapsens, I. Giovinazzo, J. Witte, C. Mondelli, S. Papadokonstantakis, K. Hungerbühler, J. Pérez-Ramírez, *Energy Environ. Sci.* **2015**, 8, 558-567 (doi:10.1039/c4ee03352c, front cover, highlighted in ETH News, Smithsonian magazine, *Chemistry World*, *Chemical processing*, *Chimia*, *C&EN*)

Impact of pore connectivity in the design of long-lived zeolite catalysts, M. Milina, S. Mitchell, D. Cooke, P. Crivelli, J. Pérez-Ramírez, *Angew. Chem. Int. Ed.* **2015**, 54, 1591-1594 (doi:10.1002/anie.201410016, back cover); *Angew. Chem.* **2015**, 127, 1698-1701 (doi: 10.1002/ange.201411639, back cover)

Design of hierarchical zeolite catalysts for the manufacture of polyurethane intermediates, T.C. Keller, J. Arras, S. Wershofen, J. Pérez-Ramírez, *ACS Catal.* **2015**, 5, 734-743 (doi:10.1021/cs5017694)

Impact of feed impurities on catalysts for chlorine recycling, M. Moser, A.P. Amrute, J. Pérez-Ramírez, *Appl. Catal., B* **2015**, 162, 602-609 (doi:10.1016/j.apcatb.2014.07.037)

Hydroxyapatite, an exceptional catalyst for the gas-phase deoxygenation of bio-oil by aldol condensation, E.G. Rodrigues, T.C. Keller, S. Mitchell, J. Pérez-Ramírez, *Green Chem.* **2014**, 16, 4870-4874 (doi:10.1039/C4GC01432D, front cover)

Opposite face sensitivity of CeO_2 in hydrogenation and oxidation catalysis, G. Vilé, S. Colussi, F. Krumeich, A. Trovarelli, J. Pérez-Ramírez, *Angew. Chem. Int. Ed.* **2014**, 126, 12265-12268 (doi:10.1002/anie.201406637, front cover); *Angew. Chem.* **2014**, *126*, 12265-12268 (doi:10.1002/ange.201406637, front cover)

Design of hydrothermally-stable dawsonite-based sorbents in technical form for CO_2 capture, O. Martin, M. Hammes, S. Mitchell, J. Pérez-Ramírez, *Energy Environ. Sci.* **2014**, 7, 3640-3650 (doi:10.1039/c4ee02012j)

Silver nanoparticles supported on passivated silica: preparation and catalytic performance in alkene semi-hydrogenation, E. Oakton, G. Vilé, D. Levine, E. Zocher, D. Baudouin, J. Pérez-Ramírez, C. Copéret, *Dalton Trans.* **2014**, 43, 1518-15142 (doi:10.1039/C4DT01320D)

Beyond the use of modifiers in selective alkyne hydrogenation: silver and gold nanocatalysts in flow mode for sustainable alkene production, G. Vilé, J. Pérez-Ramírez, *Nanoscale* **2014**, 6, 13476-13482 (doi:10.1039/C4NR02777A, front cover)

Hierarchical silicoaluminophosphates by post-synthetic modification: influence of topology, composition, and silicon distribution, D. Verboekend, M. Milina, J. Pérez-Ramírez, *Chem. Mater.* **2014**, 26, 4552-4562 (doi:10.1021/cm501774s)

Effects of binders on the performance of shaped hierarchical MFI zeolites in methanol-to-hydrocarbons, N.-L. Michels, S. Mitchell, J. Pérez-Ramírez, *ACS Catal.* **2014**, 4, 2409-2417 (doi:10.1021/cs500353b, front cover)

Stereo- and Chemoselective Character of Supported CeO_2 Catalysts for Continuous-Flow Three-Phase Alkyne Hydrogenation, G. Vilé, S. Wrabetz, L. Floryan, M.E. Schuster, F. Girgsdies, D. Teschner, J. Pérez-Ramírez, *ChemCatChem* **2014**, 6, 1928-1934 (10.1002/cctc.201402124)

Generation of novel basic centers in high-silica zeolites and their application in the gas-phase upgrading of bio-oil, T.C. Keller, E.G. Rodrigues, J. Pérez-Ramírez, *ChemSusChem* **2014**, 7, 1729-1738 (doi:10.1002/cssc.201301382)

From the Lindlar catalyst to supported ligand-modified palladium nanoparticles: selectivity patterns and accessibility constraints in the continuous-flow three-phase hydrogenation of acetylenic compounds, G. Vilé, N. Almora-Barrios, S. Mitchell, N. López, J. Pérez-Ramírez, *Chem. Eur. J.* **2014**, 20, 5926-5937 (doi:10.1002/chem.201304795, front cover, highlighted in *ChemistryViews*)

Superior mass transfer properties of technical zeolite bodies with hierarchical porosity, L. Gueudré, M. Milina, S. Mitchell, J. Pérez-Ramírez, *Adv. Funct. Mater.* **2014**, 24, 209-219 (doi:10.1002/adfm.201203557, inside cover)

Mesopore quality determines the lifetime of hierarchically-structured zeolite catalysts, M. Milina, S. Mitchell, P. Crivelli, D. Cooke, J. Pérez-Ramírez, *Nat. Commun.* **2014**, 5, 3922-3932 (doi:10.1038/ncomms4922)

Rediscovering zeolite mechanochemistry - a pathway beyond current synthesis and modification boundaries, G. Majano, L. Borchardt, S. Mitchell, V. Valtchev, J. Pérez-Ramírez, *Microporous Mesoporous Mater.* **2014**, 194, 106-114 (doi:10.1016/j.micromeso.2014.04.006)

Hierarchical Sn-MFI zeolites prepared by facile top-down methods for sugar isomerization, P.Y. Dapsens, C. Mondelli, J. Jagielski, R. Hauert, J. Pérez-Ramírez, *Catal. Sci. Technol.* **2014**, 4, 2302-2311 (doi:10.1039/C4CY00172A)

The virtue of defects: stable bromine production via catalytic oxidation of hydrogen bromide on titanium oxide, M. Moser, I. Czekaj, N. López, J. Pérez-Ramírez, *Angew. Chem. Int. Ed.* **2014**, 53, 8628-8633 (doi:10.1002/anie.201404022, frontispiece); *Angew. Chem.* **2014**, 126, 8872-8777 (doi:10.1002/ange.201404022, frontispiece)

Prospective for bio-oil upgrading via esterification over zeolite catalysts, M. Milina, S. Mitchell, J. Pérez-Ramírez, *Catal. Today* **2014**, 235, 176-183 (doi:10.1016/j.cattod.2014.02.047)

Solvent-mediated reconstruction of the metal-organic framework HKUST-1 ($Cu_3(BTC)_2$), G. Majano, O. Martin, M. Hammes, S. Smeets, C. Baerlocher, J. Pérez-Ramírez, *Adv. Funct. Mater.* **2014**, 24, 3855-3865 (doi:10.1002/adfm.201303678, VIP paper, front cover)

Towards a sustainable manufacture of hierarchical zeolites, D. Verboekend, J. Pérez-Ramírez, *ChemSusChem* **2014**, 7, 753-764 (doi:10.1002/cssc.201301313, front cover)

Bifunctional Cu/H-ZSM-5 zeolite with hierarchical porosity for hydrocarbon abatement under cold-start conditions, B. Puértolas, L. García-Andujar, T. García, M.V. Navarro, S. Mitchell, J. Pérez-Ramírez, *Appl. Catal., B* **2014**, 154-155, 161-170 (doi:10.1016/j.apcatb.2014.02.013)

Molecular-level understanding of CeO_2 as a catalyst for partial alkyne hydrogenation, *J. Phys. Chem. C* **2014**, J. Carrasco, G. Vilé, D. Fernández-Torre, R. Pérez, J. Pérez-Ramírez, M.V. Ganduglia-Pirovano, 118, 5352-5360 (doi:10.1021/jp410478c, front cover)

Catalyst distribution strategies in fixed-bed reactors for bromine production, M. Moser, L. Rodríguez-García, J. Pérez-Ramírez, *Ind. Eng. Chem. Res.* **2014**, 53, 9067-9075 (doi:10.1021/ie4036675)

Continuous process for glyoxal valorisation using tailored Lewis-acid zeolite catalysts, P.Y. Dapsens, C. Mondelli, B. Kusema, R. Verel, J. Pérez-Ramírez, *Green Chem.* **2014**, 16, 1176-1186 (doi:10.1039/C3GC42353K, front cover, hot article)

Palladium nanoparticles supported on magnetic carbon-coated cobalt nanobeads: Highly active and recyclable catalysts for alkene hydrogenation, Q.M. Kainz, R. Linhardt, R.N. Grass, G. Vilé, J. Pérez-Ramírez, W.J. Stark, O. Reiser, *Adv. Funct. Mater.* **2014**, 24, 2020-2027 (doi:10.1002/adfm.201303277)

Structural changes of a U_3O_8/ZrO_2 catalyst during HCl oxidation - a HAADF-STEM study, F. Krumeich, A.P. Amrute, C. Mondelli, J. Pérez-Ramírez, *Z. Anorg. Allg. Chem.* **2014**, 640, 768-773 (doi:10.1002/zaac.201300490)

Hierarchical high-silica zeolites as superior base catalysts, T.C. Keller, S. Isabettini, D. Verboekend, E.G. Rodrigues, J. Pérez-Ramírez, *Chem. Sci.* **2014**, 5, 677-684 (doi:10.1039/C3SC51937F)

Gallium-modified zeolites for the selective conversion of bio-based dihydroxyacetone into C1-C4 alkyl lactates, P.Y. Dapsens, B.T. Kusema, C. Mondelli, J. Pérez-Ramírez, *J. Mol. Catal. A: Chem.* **2014**, 388-389, 141-147 (doi:10.1016/j.molcata.2013.09.032)

Production of bio-derived ethyl lactate on GaUSY zeolites prepared by post-synthetic galliation, P.Y. Dapsens, M. Menart, C. Mondelli, J. Pérez-Ramírez, *Green Chem.* **2014**, 16, 589-593 (doi:10.1039/C3GC40766G)

Solid-state chemistry of cuprous delafossites: synthesis and stability aspects, A.P. Amrute, Z. Łodziana, C. Mondelli, F. Krumeich, J. Pérez-Ramírez, *Chem. Mater.* **2013**, 25, 4423-4435 (doi:10.1021/cm402902m)

HCl oxidation on IrO_2-based catalysts: from fundamentals to scale up, M. Moser, C. Mondelli, A.P. Amrute, A. Tazawa, D. Teschner, M.E. Schuster, A. Klein-Hoffman, N. Lopez, T. Schmidt, J. Pérez-Ramírez, *ACS Catal.* **2013**, 3, 2813-2822 (doi:10.1021/cs400553t)

New and revisited insights into the promotion of methanol synthesis catalysts by CO_2, O. Martin, J. Pérez-Ramírez, *Catal. Sci. Technol.* **2013**, 3, 3343-3352 (doi:10.1039/C3CY00573A)

Hierarchical zeolites by desilication: occurrence and catalytic impact of recrystallization and restructuring, D. Verboekend, M. Milina, S. Mitchell, J. Pérez-Ramírez, *Cryst. Growth Des.* **2013**, 13, 5025-5035 (doi:10.1021/cg4010483, front cover)

Silver nanoparticles for olefin production: new insights into the mechanistic description of propyne hydrogenation, G. Vilé, D. Baudouin, I.N. Remediakis, C. Copéret, N. López, J. Pérez-Ramírez, *ChemCatChem* **2013**, 5, 3750-3759 (doi:10.1002/cctc.201300569)

Catalytic bromine recovery: an enabling technology for emerging alkane functionalization processes, M. Moser, L. Rodríguez-García, A.P. Amrute, J. Pérez-Ramírez, *ChemCatChem* **2013**, 5, 3520-3523 (doi:10.1002/cctc.201300609)

Interdependence between porosity, acidity, and catalytic performance in hierarchical ZSM-5 zeolites prepared by post-synthetic modification, M. Milina, S. Mitchell, N.-L. Michels, J. Kenvin, J. Pérez-Ramírez, *J. Catal.* **2013**, 308, 398-407 (doi:10.1016/j.jcat.2013.08.020)

Status and perspectives of CO_2 conversion into fuels and chemicals by catalytic, photocatalytic and electrocatalytic processes, E.V. Kondratenko, G. Mul, J. Baltrusaitis, G.O. Larrazábal, J. Pérez-Ramírez, *Energy Environ. Sci.* **2013**, 6, 3112-3135 (doi:10.1039/C3EE41272E)

Room-temperature synthesis of Fe-BTC from layered iron hydroxides: influence of precursor organization, G. Majano, O. Ingold, M. Yulikov, G. Jeschke, J. Pérez-Ramírez, *CrystEngComm* **2013**, 15, 9885-9892 (doi:10.1039/C3CE41366G, front cover, hot article)

Superior activity of rutile-supported ruthenium nanoparticles for HCl oxidation, E.V. Kondratenko, A.P. Amrute, M.-M. Pohl, N. Steinfeldt, C. Mondelli, J. Pérez-Ramírez, *Catal. Sci. Technol.* **2013**, 3, 2555-2558 (doi:10.1039/C3CY00372H, hot article)

$CuCrO_2$ delafossite: a stable copper catalyst for chlorine production, A.P. Amrute, G.O. Larrazábal, C. Mondelli, J. Pérez-Ramírez, *Angew. Chem. Int. Ed.* **2013**, 52, 9772-9775 (doi:10.1002/anie.201304254, front cover); *Angew. Chem.* **2013**, 125, 9954-9957 (doi:10.1002/ange.201304254, front cover)

Towards liquid fuels from biosyngas: effects of zeolite structure in hierarchical- zeolite-supported cobalt catalysts, S. Sartipi, M. Alberts, M. J. Meijerink, T. C. Keller, J. Pérez-Ramírez, J. Gascon, F. Kapteijn, *ChemSusChem* **2013**, 6, 1646-1650 (doi:10.1002/cssc.201300339)

Advanced visualization strategies bridge the multidimensional complexity of technical catalysts, S. Mitchell, N.-L. Michels, G. Majano, J. Pérez-Ramírez, *Curr. Opin. Chem. Eng.* **2013**, 2, 304-311 (doi:10.1016/j.coche.2013.04.005)

From powder to technical body: the undervalued science of catalyst scale up, S. Mitchell, N.-L. Michels, J. Pérez-Ramírez, *Chem. Soc. Rev.* **2013**, 42, 6094-6112 (doi:10.1039/C3CS60076A, inside cover)

Hierarchical zeolites overcome all obstacles: next stop industrial implementation, D. Verboekend, S. Mitchell, J. Pérez-Ramírez, *Chimia* **2013**, 67, 327-332 (doi:10.2533/chimia.2013.327)

Hierarchy brings function: mesoporous clinoptilolite and L zeolite catalysts synthesized by tandem acid-base treatments, D. Verboekend, T.C. Keller, M. Milina, R. Hauert, J. Pérez-Ramírez, *Chem. Mater.* **2013**, 25, 1947-1959 (doi:10.1021/cm4006103, front cover)

Highly selective Lewis acid sites in desilicated MFI zeolites for dihydroxyacetone isomerization to lactic acid, P. Y. Dapsens, C. Mondelli, J. Pérez-Ramírez, *ChemSusChem* **2013**, 6, 831-839 (doi:10.1002/cssc.201200703)

Hydroisomerization and hydrocracking of linear and multibranched long model alkanes on hierarchical Pt/ZSM-22 zeolite, J.A. Martens, D. Verboekend, K. Thomas, G. Vanbutsele, J. Pérez-Ramírez, J.-P. Gilson, *Catal. Today* **2013**, 218-219, 135-142 (doi:10.1016/j.cattod.2013.03.041)

Industrial RuO_2-based Deacon catalysts: carrier stabilization and active phase content optimization, A. P. Amrute, C. Mondelli, T. Schmidt, R. Hauert, J. Pérez-Ramírez, *ChemCatChem* **2013**, 5, 748-756 (doi:10.1002/cctc.201200704, back cover)

Depleted uranium catalysts for chlorine production, A.P. Amrute, F. Krumeich, C. Mondelli, J. Pérez-Ramírez, *Chem. Sci.* **2013**, 4, 2209-2217 (doi:10.1039/C3SC22067B)

Hydroisomerization of emerging renewable hydrocarbons using hierarchical Pt/H-ZSM-22 catalyst, J.A. Martens, D. Verboekend, K. Thomas, G. Vanbutsele, J.-P. Gilson, J. Pérez-Ramírez, *ChemSusChem* **2013**, 6, 421-425 (doi:10.1002/cssc.201200888)

Tailored crystalline microporous materials by post-synthesis modification, V. Valtchev, G. Majano, S. Mintova, J. Pérez-Ramírez, *Chem. Soc. Rev.* **2013**, 42, 263-290 (doi:10.1016/j.jcat.2013.08.020)

Understanding CeO_2 as Deacon catalyst by probe molecule adsorption and in situ infrared characterizations, R. Farra, S. Wrabetz, M.E. Schuster, E. Stotz, N.G. Hamilton, A.P. Amrute, J. Pérez-Ramírez, N. López, D. Teschner, *Phys. Chem. Chem. Phys.* **2013**, 15, 3454-3465 (doi:10.1039/c2cp42767b)

Stabilized hierarchical USY zeolite catalysts for simultaneous increase in diesel and LPG olefinicity during catalytic cracking, C. Martínez, D. Verboekend, J. Pérez-Ramírez, A. Corma, *Catal. Sci. Technol.* **2013**, 3, 972-981 (doi:10.1039/C2CY20688A)

Scalable room-temperature conversion of copper(II) hydroxide into HKUST-1 ($Cu_3(btc)_2$), G. Majano, J. Pérez-Ramírez, *Adv. Mater.* **2013**, 25, 1052-1057 (doi:10.1002/adma.201203664, back cover)

Supported CeO_2 catalysts in technical form for sustainable chlorine production, M. Moser, C. Mondelli, T. Schmidt, F. Girgsdies, M.E. Schuster, R. Farra, L. Szentmiklósi, D. Teschner, J. Pérez-Ramírez, *Appl. Catal., B* **2013**, 132-133, 123-131 (doi:10.1016/j.apcatb.2012.11.024)

Hierarchical FAU and LTA-type zeolites by post-synthetic design: a new generation of highly efficient base catalysts, D. Verboekend, T.C. Keller, S. Mitchell, J. Pérez-Ramírez, *Adv. Funct. Mater.* **2013**, 23, 1923-1934 (doi:10.1002/adfm.201202320, front cover)

Do observations on surface coverage-reactivity correlations always describe the true catalytic process? A case study on ceria, R. Farra, M. Eichelbaum, R. Schlögl, L. Szentmiklósi, T. Schmidt, A.P. Amrute, C. Mondelli, J. Pérez-Ramírez, D. Teschner, *J. Catal.* **2013**, 297, 119-127 (doi:10.1016/j.jcat.2012.09.024)

On the location, strength and accessibility of Brønsted acid sites in hierarchical ZSM-5 particles, D. Tzoulaki, A. Jentys, J. Pérez-Ramírez, K. Egeblad, J.A. Lercher, *Catal. Today* **2012**, 198, 3-11 (doi:10.1016/j.cattod.2012.03.078)

Room-temperature synthesis and size control of HKUST-1 ($Cu_3(btc)_2$), G. Majano, J. Pérez-Ramírez, *Helv. Chim. Acta* **2012**, 95, 2278-2286 (doi:10.1002/hlca.201200466)

Surface and pore structure assessment of hierarchical MFI zeolites by advanced water and argon sorption studies, M. Thommes, S. Mitchell, J. Pérez-Ramírez, *J. Phys. Chem. C* **2012**, 116, 18816-18823 (doi:10.1021/jp3051214)

Assembly of a hierarchical zeolite-silica composite by spray drying, G. Majano, A. Restuccia, M. Santiago, J. Pérez-Ramírez, *CrystEngComm* **2012**, 14, 5985-5991 (doi:10.1039/C2CE25373A)

Kinetic aspects and deactivation behavior of chromia-based catalysts in hydrogen chloride oxidation, A.P. Amrute, C. Mondelli, J. Pérez-Ramírez, *Catal. Sci. Technol.* **2012**, 2, 2057-2065 (doi:10.1039/C2CY20185B)

Mechanistic study of the palladium-catalyzed ethyne hydrogenation by the temporal analysis of products technique, M.A.G. Hevia, B. Bridier, J. Pérez-Ramírez, *Appl. Catal., A* **2012**, 439-440, 163-170 (doi:10.1016/j.apcata.2012.07.001)

Biobased chemicals from conception toward industrial reality: lessons learned and to be learned, P.Y. Dapsens, C. Mondelli, J. Pérez-Ramírez, *ACS Catal.* **2012**, 2, 1487-1499 (doi:10.1021/cs300124m)

Mesopore formation in USY and beta zeolites by base leaching: selection criteria and optimization of pore-directing agents, D. Verboekend, G. Vilé, J. Pérez-Ramírez, *Cryst. Growth Des.* **2012**, 12, 3123-3132 (doi:10.1021/cg3003228)

Molecular understanding of enyne hydrogenation over Pd and Cu catalysts, B. Bridier, D. Karhanek, J. Pérez-Ramírez, N. López, *ChemCatChem* **2012**, 4, 1420-1427 (doi:10.1002/cctc.201200021)

Hierarchically structured zeolite bodies: assembling micro-, meso-, and macroporosity levels in complex materials with enhanced properties, N.-L. Michels, S. Mitchell, M. Milina, K. Kunze, F. Krumeich, F. Marone, M. Erdmann, N. Marti, J. Pérez-Ramírez, *Adv. Funct. Mater.* **2012**, 22, 2509-2518 (doi:10.1002/adfm.201103120)

By-product co-feeding reveals insights into the role of zinc on methanol synthesis catalysts, M. Santiago, K. Barbera, C. Ferreira, D. Curulla-Ferré, P. Kolb, J. Pérez-Ramírez, *Catal. Commun.* **2012**, 21, 63-67 (doi:10.1016/j.catcom.2012.01.031)

Performance, structure, and mechanism of CeO_2 in HCl oxidation to Cl_2, A.P. Amrute, C. Mondelli, M. Moser, G. Novell-Leruth, N. López, D. Rosenthal, R. Farra, M.E. Schuster, D. Teschner, T. Schmidt, J. Pérez-Ramírez, *J. Catal.* **2012**, 286, 287-297 (doi:10.1016/j.jcat.2011.11.016, top cited article during 2012)

Hierarchical Y and USY zeolites designed by post-synthetic strategies, D. Verboekend, G. Vilé, J. Pérez-Ramírez, *Adv. Funct. Mater.* **2012**, 22, 916-928 (doi:10.1002/adfm.201102411, front cover)

Promotional effect of Ni in the selective gas-phase hydrogenation of chloronitrobenzene over Cu-based catalysts, F. Cárdenas-Lizana, B. Bridier, C.C. Kai Shin, J. Pérez-Ramírez, L. Kiwi-Minsker, *ChemCatChem* **2012**, 4, 668-673 (doi:10.1002/cctc.201100470)

Influence of crystal size and probe molecule on diffusion in hierarchical ZSM-5 zeolites prepared by desilication, F.C. Meunier, D. Verboekend, J.-P. Gilson, J.C. Groen, J. Pérez-Ramírez, *Microporous Mesoporous Mater.* **2012**, 148, 115-121 (doi:10.1016/j.micromeso.2011.08.002)

An integrated approach to Deacon chemistry on RuO_2-based catalysts, D. Teschner, R. Farra, L. Yao, R. Schlögl, H. Soerijanto, R. Schomäcker, T. Schmidt, L. Szentmiklósi, A.P. Amrute, C. Mondelli, J. Pérez-Ramírez, G. Novell-Leruth, N. López, *J. Catal.* **2012**, 285, 273-284 (doi:10.1016/j.jcat.2011.09.039, top cited article during 2012)

Visualization of hierarchically structured zeolite bodies from macro to nano length scales, S. Mitchell, N.-L. Michels, K. Kunze, J. Pérez-Ramírez, *Nat. Chem.* **2012**, 4, 825-831 (doi:10.1038/nchem.1403)

Ceria in hydrogenation catalysis: high selectivity in the conversion of alkynes to olefins, G. Vilé, B. Bridier, J. Wichert, J. Pérez-Ramírez, *Angew. Chem. Int. Ed.* **2012**, 51, 8620-8623 (doi:10.1002/anie.201203675, highlighted in Chimia); *Angew. Chem.* **2012**, 124, 8748-8751 (doi:10.1002/ange.201203675, highlighted in Chimia)

In situ surface coverage analysis of the RuO_2-catalyzed HCl oxidation reveals the entropic origin of compensation in heterogeneous catalysis, D. Teschner, G. Novell-Leruth, R. Farra, A. Knop-Gericke, R. Schlögl, L. Szentmiklósi, M.G. Hevia, H. Soerijanto, R. Schomäcker, J. Pérez-Ramírez, N. López *Nature Chem.* **2012**, 4, 739-745 (doi:10.1038/nchem.1411)

Decoupling porosity and compositional effects on desilicated ZSM-5 zeolites for optimal alkylation performance, M. Milina, S. Mitchell, Z. Domínguez Trinidad, D. Verboekend, J. Pérez-Ramírez, *Catal. Sci. Technol.* **2012**, 2, 759-766 (doi:10.1039/C2CY00456A, hot article)

Selectivity patterns in heterogeneously catalyzed hydrogenation of conjugated ene-yne and diene compounds, B. Bridier, J. Pérez-Ramírez, *J. Catal.* **2011**, 284, 165-175 (doi:10.1016/j.jcat.2011.10.003)

Sustainable chlorine recycling via catalysed HCl oxidation: from fundamentals to implementation, J. Pérez-Ramírez, C. Mondelli, T. Schmidt, O.F.-K. Schlüter, A. Wolf, L. Mleczko, T. Dreier, *Energy Environ. Sci.* **2011**, 4, 4786-4799 (doi:10.1039/C1EE02190G)

Mechanistic analysis of direct N_2O decomposition and reduction with H_2 or NH_3 over RuO_2, M. Santiago, V.A. Kondratenko, E.V. Kondratenko, N. Lopez, J. Pérez-Ramírez, *Appl. Catal., B.* **2011**, 110, 33-39 (doi:10.1016/j.apcatb.2011.08.019, front cover)

Expanding the horizons of hierarchical zeolites: beyond laboratory curiosity towards industrial realization, J. Pérez-Ramírez, S. Mitchell, D. Verboekend, M. Milina, N.-L. Michels, F. Krumeich, N. Marti, M. Erdmann, *ChemCatChem* **2011**, 3, 1731-1734 (doi:10.1002/cctc.201100264)

Towards more efficient monodimensional zeolite catalysts: n-alkane hydro-isomerisation on hierarchical ZSM-22, D. Verboekend, K. Thomas, M. Milina, S. Mitchell, J. Pérez-Ramírez, J.-P. Gilson, *Catal. Sci. Technol.* **2011**, 1, 1331-1335 (doi:10.1039/C1CY00240F)

Full compositional flexibility in the preparation of mesoporous MFI zeolites by desilication, D. Verboekend, S. Mitchell, M. Milina, J.C. Groen, J. Pérez-Ramírez, *J. Phys. Chem. C* **2011**, 115, 14193-14203 (doi:10.1021/jp201671s)

Delafossite-based copper catalyst for sustainable Cl_2 production, C. Mondelli, A.P. Amrute, T. Schmidt, J. Pérez-Ramírez, *Chem. Commun.* **2011**, 47, 7173-7175 (doi:10.1039/C1CC11891A)

Spray deposition method for the synthesis of supported catalysts with superior metal dispersion, M. Santiago, A. Restuccia, F. Gramm, J. Peréz-Ramírez, *Microporous Mesoporous Mater.* **2011**, 146, 76-81 (doi:10.1016/j.micromeso.2011.05.015)

Mechanism-performance relationships of metal oxides in catalyzed HCl oxidation, A.P. Amrute, C. Mondelli, M.A.G. Hevia, J. Pérez-Ramírez, *ACS Catal.* **2011**, 1, 583-590 (doi:10.1021/cs200075j)

Surface state during activation and reaction of high-performing multi-metallic alkyne hydrogenation catalysts, B. Bridier, J. Pérez-Ramírez, A. Knop-Gericke, R. Schlögl, D. Teschner, *Chem. Sci.* **2011**, 2, 1379-1383 (doi:10.1039/C1SC00069A)

Reevaluation of the structure and fundamental physical properties of dawsonites by DFT studies, Z. Łodziana, G. Stoica, J. Pérez-Ramírez, *Inorg. Chem.* **2011**, 50, 2590-2598 (doi:10.1021/ic102443h)

Preparation of organic-functionalized mesoporous ZSM-5 zeolites by consecutive desilication and silanization, S. Mitchell, A. Bonilla, J. Pérez-Ramírez, *Mater. Chem. Phys.* **2011**, 127, 278-284 (doi:10.1016/j.matchemphys.2011.02.003)

Mesoporous ZSM-22 zeolite obtained by desilication: peculiarities associated with crystal morphology and aluminium distribution, D. Verboekend, A.M. Chabaneix, K. Thomas, J.-P. Gilson, J. Pérez-Ramírez, *CrystEngComm* **2011**, 13, 3408-3416 (doi:10.1039/C0CE00966K)

Shaped RuO_2/SnO_2-Al_2O_3 catalyst for large-scale stable Cl_2 production via HCl oxidation, C. Mondelli, A.P. Amrute, F. Krumeich, T. Schmidt, J. Pérez-Ramírez, *ChemCatChem* **2011**, 3, 657-660 (doi:10.1002/cctc.201000424, front cover, hot article)

A density functional theory study of the 'mythic' Lindlar hydrogenation catalyst, M. García-Mota, J. Gómez-Díaz, G. Novell-Leruth, C. Vargas, L. Bellarosa, B. Bridier, J. Pérez Ramírez, N. López, *Theor. Chem. Acc.* **2011**, 128, 663-673 (doi:10.1007/s00214-010-0800-0)

Desilication mechanism revisited: Highly mesoporous all-silica zeolites enabled through pore-directing agents, D. Verboekend, J. Pérez-Ramírez, *Chem. Eur. J.* **2011**, 17, 1137-1147 (doi:10.1002/chem.201002589, inside cover)

Permanent alkene selectivity enhancement in copper-catalyzed propyne hydrogenation by temporary CO supply, B. Bridier, J. Pérez-Ramírez, *J. Catal.* **2011**, 278, 167-172 (doi:10.1016/j.jcat.2010.11.024)

Temporal analysis of products study of HCl oxidation over copper- and ruthenium-based catalysts, A.P. Amrute, C. Mondelli, M.A.G. Hevia, J. Pérez-Ramírez, *J. Phys. Chem. C* **2011**, 115, 1056-1063 (doi:10.1021/jp1058319)

Design of hierarchical zeolite catalysts by desilication, D. Verboekend, J. Pérez-Ramírez, *Catal. Sci. Technol.* **2011**, 1, 879-890 (doi:10.1039/C1CY00150G, front cover)

Mesoporous zeolites as enzyme carriers: synthesis, characterization, and application in biocatalysis, S. Mitchell, J. Pérez-Ramírez, *Catal. Today* **2011**, 168, 28-37 (doi:10.1016/j.cattod.2010.10.058)

Transient mechanistic study of the gas-phase HCl oxidation to Cl_2 on bulk and supported RuO_2 catalysts, M.A.G. Hevia, A.P. Amrute, T. Schmidt, J. Pérez-Ramírez, *J. Catal.* **2010**, 276, 141-151 (doi:10.1016/j.jcat.2010.09.009)

Stability and inter-conversion of synthetic dawsonites in aqueous media, G. Stoica, J. Pérez-Ramírez, *Geochim. Cosmochim. Acta* **2010**, 74, 7048-7058 (doi:10.1016/j.gca.2010.09.013)

Mechanism and micro-kinetics of direct N_2O decomposition over $BaFeAl_{11}O_{19}$ hexaaluminate and comparison with Fe-MFI zeolites, E.V. Kondratenko, V.A. Kondratenko, M. Santiago, J. Pérez-Ramírez, *Appl. Catal., B* **2010**, 99, 66-73 (doi:10.1016/j.apcatb.2010.05.033)

Pressure and materials effects on the selectivity of RuO_2 in NH_3 oxidation, J. Pérez-Ramírez, N. López, E.V. Kondratenko, *J. Phys. Chem. C* **2010**, 114, 16660-16668 (doi:10.1021/jp106193w)

Molecular understanding of alkyne hydrogenation for the design of selective catalysts, B. Bridier, N. López, J. Pérez-Ramírez, *Dalton Trans.* **2010**, 39, 8412-8419 (doi:10.1039/C0DT00010H)

Reactivity of Mg-Al hydrotalcites in solid and delaminated forms in ammonium carbonate solutions, G. Stoica, M. Santiago, S. Abelló, J. Pérez-Ramírez, *Solid State Sci.* **2010**, 12, 1822-1830 (doi:10.1016/j.solidstatesciences.2010.08.003)

Properties and functions of hierarchical ferrierite zeolites obtained by sequential post-synthesis treatments, D. Verboekend, R. Caicedo-Realpe, A. Bonilla, M. Santiago, J. Pérez-Ramírez, *Chem. Mater.* **2010**, 22, 4679-4689 (doi:10.1021/cm100886y)

Cooperative effects in ternary Cu-Ni-Fe catalysts lead to enhanced alkene selectivity in alkyne hydrogenation, B. Bridier, J. Pérez-Ramírez, *J. Am. Chem. Soc.* **2010**, 132, 4321-4327 (doi:10.1021/ja9101997)

Acidity and accessibility studies on mesoporous ITQ-4 zeolite, D. Verboekend, L.A. Villaescusa, K. Thomas, I. Stan, J. Pérez-Ramírez, *Catal. Today* **2010**, 152, 11-16 (doi:10.1016/j.cattod.2010.02.004)

Partial hydrogenation of propyne over copper-based catalysts and comparison with nickel-based analogues, B. Bridier, N. López, J. Pérez-Ramírez, *J. Catal.* **2010**, 269, 80-92 (doi:10.1016/j.jcat.2009.10.019)

Mesoporous ZSM-5 zeolites prepared by a two-step route comprising sodium aluminate and acid treatments, R. Caicedo-Realpe, J. Pérez-Ramírez, *Microporous Mesoporous Mater.* **2010**, 128, 91-100 (doi:10.1016/j.micromeso.2009.08.009)

Hierarchical ZSM-5 zeolites in shape-selective xylene isomerization: role of mesoporosity and acid site speciation, C. Fernandez, I. Stan, J.-P. Gilson, K. Thomas, A. Vicente, A. Bonilla, J. Pérez-Ramírez, *Chem. Eur. J.* **2010**, 16, 6224-6233 (doi:10.1002/chem.200903426)

Interplay of properties and functions upon introduction of mesoporosity in ITQ-4 zeolite, D. Verboekend, J.C. Groen, J. Pérez-Ramírez, *Adv. Funct. Mater.* **2010**, 20, 1441-1450 (doi:10.1002/adfm.200902205)

DRIFTS study of the catalytic N_2O reduction by SO_2 on FeZSM-5, S. Abelló, M.A.G. Hevia, M. Santiago, J. Pérez-Ramírez, *Catal. Commun.* **2010**, 11, 1058-1062 (doi:10.1016/j.catcom.2010.05.009)

Perturbing the properties of layered double hydroxides by continuous coprecipitation with short residence time, S. Abelló, S. Mitchell, M. Santiago, G. Stoica, J. Pérez-Ramírez, *J. Mater. Chem.* **2010**, 20, 5878-5887 (doi:10.1039/C0JM00088D)

Interplay between carbon monoxide, hydrides, and carbides in selective alkyne hydrogenation on palladium, M. García-Mota, B. Bridier, N. López, J. Pérez-Ramírez, *J. Catal.* **2010**, 273, 92-102 (doi:10.1016/j.jcat.2010.04.018)

Accelerated generation of intracrystalline mesoporosity in zeolites by microwave-mediated desilication, S. Abelló, J. Pérez-Ramírez, *Phys. Chem. Chem. Phys.* **2009**, 11, 2959-2963 (doi:10.1039/b819543a)

Tailored mesoporosity development in zeolite crystals by partial detemplation and desilication, J. Pérez-Ramírez, S. Abelló, A. Bonilla, J.C. Groen, *Adv. Funct. Mater.* **2009**, 19, 164-172 (doi:10.1002/adfm.200800871, front cover)

Theoretical investigation of the inversion parameter in $Co_{3-s}Al_sO_4$ (s = 0-3) spinel structures, F. Tielens, M. Calatayud, R. Franco, J.M. Recio, J. Pérez-Ramírez, C. Minot, *Solid State Ionics* **2009**, 180, 1011-1016 (doi:10.1016/j.ssi.2009.03.023)

Mechanism of ammonia oxidation over PGM (Pt, Pd, Rh) wires by temporal analysis of products and density functional theory, J. Pérez-Ramírez, E.V. Kondratenko, G. Novell-Leruth, J.M. Ricart, *J. Catal.* **2009**, 261, 217-223 (doi:10.1016/j.jcat.2008.11.018)

Mesoporous metallosilicate zeolites by desilication: On the generic pore-inducing role of framework trivalent heteroatoms, J.C. Groen, R. Caicedo-Realpe, S. Abelló, J. Pérez-Ramírez, *Mater. Lett.* **2009**, 63, 1037-1040 (doi:10.1016/j.matlet.2009.02.001)

Synthesis of dimethyl carbonate by transesterification of ethylene carbonate over activated dawsonites, G. Stoica, S. Abelló, J. Pérez-Ramírez, *ChemSusChem* **2009**, 2, 301-304 (doi:10.1002/cssc.200800195)

Quantification of enhanced acid site accessibility in hierarchical zeolites - The accessibility index, F. Thibault-Starzyk, I. Stan, S. Abelló, A. Bonilla, K. Thomas, C. Fernandez, J.-P. Gilson, J. Pérez-Ramírez, *J. Catal.* **2009**, 264, 11-14 (doi:10.1016/j.jcat.2009.03.006)

Evaluation of catalysts for N_2O abatement in fluidized-bed combustion, M. Santiago, M.A.G. Hevia, J. Pérez-Ramírez, *Appl. Catal., B* **2009**, 90, 83-88 (doi:10.1016/j.apcatb.2009.02.017)

Desilication of ferrierite zeolite for porosity generation and improved effectiveness in polyethylene pyrolysis, A. Bonilla, D. Baudouin, J. Pérez-Ramírez, *J. Catal.* **2009**, 265, 170-180 (doi:10.1016/j.jcat.2009.04.022)

Mesoporous ZSM-5 zeolite catalysts prepared by desilication with organic hydroxides and comparison with NaOH leaching, S. Abelló, A. Bonilla, J. Pérez-Ramírez, *Appl. Catal., A* **2009**, 364, 191-198 (doi:10.1016/j.apcata.2009.05.055)

Na-dawsonite derived aluminates for DMC production by transesterification of ethylene carbonate, G. Stoica, S. Abelló, J. Pérez-Ramírez, *Appl. Catal., A* **2009**, 365, 252-260 (doi:10.1016/j.apcata.2009.06.022)

Epoxidation catalysts derived from aluminium and gallium dawsonites, G. Stoica, M. Santiago, P.A. Jacobs, J. Pérez-Ramírez, P.P. Pescarmona, *Appl. Catal., A* **2009**, 371, 43-53 (doi:10.1016/j.apcata.2009.09.021)

Zeolite catalysts with tunable hierarchy factor by pore-growth moderators, J. Pérez-Ramírez, D. Verboekend, A. Bonilla, S. Abelló, *Adv. Funct. Mater.* **2009**, 19, 3972-3979 (doi:10.1002/adfm.200901394, front cover)

Assessment of the low-temperature EnviNOx® variant for catalytic N_2O abatement over steam-activated FeZSM-5, M.A.G. Hevia, J. Pérez-Ramírez, *Appl. Catal., B* **2008**, 77, 248-254 (doi:10.1016/j.apcatb.2007.07.013)

Hierarchical zeolites: enhanced utilisation of microporous crystals in catalysis by advances in materials design, J. Pérez-Ramírez, C.H. Christensen, K. Egeblad, C.H. Christensen, J.C. Groen, *Chem. Soc. Rev.* **2008**, 37, 2530-2542 (doi:10.1039/B809030K)

Mechanism of HCl oxidation (Deacon reaction) over RuO_2, N. López, J. Gómez-Segura, R.P. Marín, J. Pérez-Ramírez, *J. Catal.* **2008**, 255, 29-39 (doi:10.1016/j.jcat.2008.01.020)

Visualizing the crystal structure and locating the catalytic activity of micro- and mesoporous ZSM-5 zeolite crystals using in situ optical and fluorescence microscopy, M.H.F. Kox, E. Stavitski, J.C. Groen, J. Pérez-Ramírez, F. Kapteijn, B.M. Weckhuysen, *Chem. Eur. J.* **2008**, 14, 1718-1725 (doi:10.1002/chem.200701591)

The role of Brønsted acidity in the SCR of NO over Fe-MFI catalysts, M. Schwidder, M. Santosh Kumar, U. Bentrup, J. Pérez-Ramírez, A. Brückner, W. Grünert, *Microporous Mesoporous Mater.* **2008**, 111, 124-133 (doi:10.1016/j.micromeso.2007.07.019)

Stability, reutilization, and scalability of activated hydrotalcites in aldol condensation, S. Abelló, D. Vijaya-Shankar, J. Pérez-Ramírez, *Appl. Catal., A* **2008**, 342, 119-125 (doi:10.1016/j.apcata.2008.03.010)

Carbon-templated hexaaluminates with enhanced surface area and catalytic performance, M. Santiago, J.C. Groen, J. Pérez-Ramírez, *J. Catal.* **2008**, 257, 152-162 (doi:10.1016/j.jcat.2008.04.017)

Mesoporous beta zeolite obtained by desilication, J.C. Groen, S. Abelló, L.A. Villaescusa, J. Pérez-Ramírez, *Microporous Mesoporous Mater.* **2008**, 114, 93-102 (doi:10.1016/j.micromeso.2007.12.025)

Selective homogeneous and heterogeneous gold catalysis with alkynes and alkenes: similar behavior, different origin, M. García-Mota, N. Cabello, F. Maseras, A.M. Echavarren, J. Pérez-Ramírez, N. López, *ChemPhysChem* **2008**, 9, 1624-1629 (doi:10.1002/cphc.200800246)

Reconstruction of dawsonite by alumina carbonation in $(NH_4)_2CO_3$: requisites and mechanism, G. Stoica, J.C. Groen, S. Abelló, R. Manchanda, J. Pérez-Ramírez, *Chem. Mater.* **2008**, 20, 3973-3982 (doi:10.1021/cm800359t)

Discriminating reasons for selectivity enhancement of CO in alkyne hydrogenation on palladium, N. Lopez, B. Bridier, J. Pérez-Ramírez, *J. Phys. Chem. C* **2008**, 112, 9346-9350 (doi:10.1021/jp711258q)

Pt(100)-catalyzed ammonia oxidation studied by DFT: mechanism and microkinetics, G. Novell-Leruth, J.M. Ricart, J. Pérez-Ramírez, *J. Phys. Chem. C* **2008**, 112, 13554-13562 (doi:10.1021/jp802489y)

Mechanistic origin of the different activity of Rh-ZSM-5 and Fe-ZSM-5 in direct N_2O decomposition, E.V. Kondratenko, V.A. Kondratenko, M. Santiago, J. Pérez-Ramírez, *J. Catal.* **2008**, 256, 248-258 (doi:10.1016/j.jcat.2008.03.016)

Activated takovite catalysts for partial hydrogenation of ethyne, propyne, and propadiene, S. Abelló, D. Verboekend, B. Bridier, J. Pérez-Ramírez, *J. Catal.* **2008**, 259, 85-95 (doi:10.1016/j.jcat.2008.07.012)

Toward functional clathrasils: size- and composition-controlled octadecasil nanocrystals by desilication, J. Pérez-Ramírez, S. Abelló, L.A. Villaescusa, A. Bonilla, *Angew. Chem., Int. Ed.* **2008**, 47, 7913-7917

(doi:10.1002/anie.200802393, VIP, front cover); *Angew. Chem.* **2008**, 120, 8031-8035 (10.1002/ange.200802393, VIP, front cover)

Reply to ‘‘Comments on ‘Assessment of the low-temperature EnviNOx® variant for catalytic N_2O abatement over steam-activated FeZSM-5: Miguel A.G. Hevia, Javier Pérez-Ramírez, Appl. Catal., B: Environ. 77 (2008) 248-254”, M.A.G. Hevia, J. Pérez-Ramírez, *Appl. Catal., B* **2008**, 84, 543-544 (doi:10.1016/j.apcatb.2008.05.006)

Optimal hydrocarbon selection for catalytic N_2O reduction over iron-containing ZSM-5 zeolite, M.A.G. Hevia, J. Pérez-Ramírez, *Environ. Sci. Technol.* **2008**, 42, 8896-8900 (doi:10.1021/es801971w)

SO_2-promoted catalytic N_2O removal over iron zeolites, J. Pérez-Ramírez, M.A.G. Hevia, S. Abelló, *Chem. Commun.* **2008**, 5351-5353 (doi:10.1039/b811703a)

Prospects of N_2O emission regulations in the European fertilizer industry, J. Pérez-Ramírez, *Appl. Catal., B* **2007**, 70, 31-35 (doi:10.1016/j.apcatb.2005.11.019)

Reforming dawsonite by memory effect of AACH-derived aluminas, G. Stoica, J. Pérez-Ramírez, *Chem. Mater.* **2007**, 19, 4783-4790 (doi:10.1021/cm071351g)

Ammonia dissociation on Pt(100), Pt(111) and Pt(211): a comparative density functional theory study, W.K. Offermans, A.P.J. Jansen, R.A. van Santen, G. Novell-Leruth, J.M. Ricart, J. Pérez-Ramírez, *J. Phys. Chem. C* **2007**, 111, 17551-17557 (doi:10.1021/jp073083f)

Catalytic reduction of N_2O over Fe-ZSM-5 zeolite. Comparison of CH_4, CO, and their mixtures in the absence or presence of excess O_2, M.N. Debbagh, C. Salinas Martínez de Lecea, J. Pérez-Ramírez, *Appl. Catal., B* **2007**, 70, 335-341 (doi:10.1016/j.apcatb.2005.11.028)

Aldol condensation of campholenic aldehyde and MEK over activated hydrotalcite, S. Abelló, F. Medina, D. Tichit, J. Pérez-Ramírez, Y. Cesteros, P. Salagre, J.E. Sueiras, *Appl. Catal., B* **2007**, 70, 577-584 (doi:10.1016/j.apcatb.2006.01.021)

Evolution, achievements, and perspectives of the TAP technique, J. Pérez-Ramírez, E.V. Kondratenko, *Catal. Today* **2007**, 121, 160-169 (doi:10.1016/j.cattod.2007.01.001)

Mechanistic peculiarities of N_2O reduction by CH_4 over Fe-silicalite, E.V. Kondratenko, J. Pérez-Ramírez, *Catal. Today* **2007**, 119, 243-246 (doi:10.1016/j.cattod.2006.08.007)

Rational modelling of the CPO of methane over platinum gauze. Elementary gas-phase and surface mechanisms coupled with flow simulations, R. Quiceno, O. Deutschmann, J. Warnatz, J. Pérez-Ramírez, *Catal. Today* **2007**, 119, 311-316 (doi:10.1016/j.cattod.2006.08.045)

Ammonia dehydrogenation over platinum-group metal surfaces. Structure, stability and reactivity of adsorbed NH_x species, G. Novell-Leruth, A. Valcárcel, J. Pérez-Ramírez, J.M. Ricart, *J. Phys. Chem. C* **2007**, 111, 860-868 (doi:10.1021/jp064742b)

Memory effect of activated Mg-Al hydrotalcite. In situ XRD studies during decomposition and gas-phase reconstruction, J. Pérez-Ramírez, S. Abelló, N.M. van der Pers, *Chem. Eur. J.* **2007**, 13, 870-878 (doi:10.1002/chem.200600767)

Direct demonstration of enhanced diffusion in mesoporous ZSM-5 zeolite obtained via controlled desilication, J.C. Groen, W. Zhu, S. Brouwer, S. Huynink, F. Kapteijn, J.A. Moulijn, J. Pérez-Ramírez, *J. Am. Chem. Soc.* **2007**, 129, 355-360 (doi:10.1021/ja065737o)

Metal-substituted hexaaluminates for high-temperature N_2O abatement, J. Pérez-Ramírez, M. Santiago, *Chem. Commun.* **2007**, 619-621 (doi:10.1039/B613602H)

In situ studies during thermal activation of dawsonite-type compounds to oxide catalysts, M.S. Yalfani, M. Santiago, J. Pérez-Ramírez, *J. Mater. Chem.* **2007**, 17, 1222-1229 (doi:10.1039/B615264C)

Influence of the divalent cation on the thermal activation and reconstruction of hydrotalcite-like compounds, J. Pérez-Ramírez, S. Abelló, N.M. van der Pers, *J. Phys. Chem. C* **2007**, 111, 3642-3650 (doi:10.1021/jp064972q)

Decomposition of N_2O over hexaaluminate catalysts, M. Santiago, J. Pérez-Ramírez, *Environ. Sci. Technol.* **2007**, 41, 1704-1709 (doi:10.1021/es061894b)

Micro-kinetic analysis of direct N_2O decomposition over steam-activated Fe-silicalite from transient experiments in the TAP reactor, E.V. Kondratenko, J. Pérez-Ramírez, *Catal. Today* **2007**, 121, 197-203 (doi:10.1016/j.cattod.2006.08.066)

Origin of the superior hydrogenation selectivity of gold nanoparticles in alkyne+alkene mixtures: triple vs double bond activation, Y. Segura, N. López, J. Pérez-Ramírez, *J. Catal.* **2007**, 247, 383-386 (doi:10.1016/j.jcat.2007.02.019)

Hydrogenolysis of methylcyclopentane over bimetallic Ir-Au/gamma-Al_2O_3 catalysts, R.J. Chimentão, G.P. Valença, F. Medina, J. Pérez-Ramírez, *Appl. Surf. Sci.* **2007**, 253, 5888-5893 (doi:10.1016/j.apsusc.2006.12.061)

Accelerated study of the citral-acetone condensation kinetics over activated Mg-Al hydrotalcite, S. Abelló, S. Dhir, G. Colet, J. Pérez-Ramírez, *Appl. Catal., A* **2007**, 325, 121-129 (doi:10.1016/j.apcata.2007.03.022)

Alkaline post-treatment of MFI zeolites. From accelerated screening to scale-up, J.C. Groen, J.A. Moulijn, J. Pérez-Ramírez, *Ind. Eng. Chem. Res.* **2007**, 46, 4193-4201 (doi:10.1021/ie061146v)

Deactivation and regeneration of iron-containing MFI zeolites in propane oxidative dehydrogenation by N_2O, O. Sánchez-Galofré, Y. Segura, J. Pérez-Ramírez, *J. Catal.* **2007**, 249, 123-133 (doi:10.1016/j.jcat.2007.04.010)

Kinetics of the N_2O+CO reaction over steam-activated FeZSM-5, M.N. Debbagh, A. Bueno-López, C. Salinas-Martínez de Lecea, J. Pérez-Ramírez, *Appl. Catal., A* **2007**, 327, 66-72 (doi:10.1016/j.apcata.2007.04.029)

Mechanism of ammonia oxidation over oxides studied by temporal analysis of products, J. Pérez-Ramírez, E.V. Kondratenko, *J. Catal.* **2007**, 250, 240-246 (doi:10.1016/j.jcat.2007.06.014)

Alkaline-mediated mesoporous mordenite zeolites for acid-catalyzed conversions, J.C. Groen, T. Sano, J.A. Moulijn, J. Pérez-Ramírez, *J. Catal.* **2007**, 251, 21-27 (doi:10.1016/j.jcat.2007.07.020)

In situ monitoring of desilication of MFI-type zeolites in alkaline medium, J.C. Groen, G.M. Hamminga, J.A. Moulijn, J. Pérez-Ramírez, *Phys. Chem. Chem. Phys.* **2007**, 9, 4822-4830 (doi:10.1039/b705418a)

Desilication: on the controlled generation of mesoporosity in MFI zeolites, J.C. Groen, L.A.A. Peffer, J.A. Moulijn, J. Pérez-Ramírez, *J. Mater. Chem.* **2006**, 16, 2121-2131 (doi:10.1039/b517510k, front cover)

Evidence of the vital role of the pore network on various catalytic conversion of N_2O over Fe-silicalite and Fe-SBA-15 with the same iron constitution, M. Santosh Kumar, J. Pérez-Ramírez, M.N. Debbagh, B. Smarsly, A. Brückner, *Appl. Catal., B* **2006**, 62, 244-254 (doi:10.1016/j.apcatb.2005.07.012)

Distinct time-on-stream behavior of pure Pt and Rh metals and Pt-Rh alloys in direct N_2O decomposition at high temperatures, E.V. Kondratenko, R. Kraehnert, M. Rodnick, M. Baerns, J. Pérez-Ramírez, *Appl. Catal., A* **2006**, 298, 73-79 (doi:10.1016/j.apcata.2005.09.022)

A periodic DFT study of the structural and electronic properties of bulk $CoAl_2O_4$ spinel, F. Tielens, M. Calatayud, R. Franco, J.M. Recio, J. Pérez-Ramírez, C. Minot, *J. Phys. Chem. B* **2006**, 110, 988-995 (doi:10.1021/jp053375l)

Importance of the influence of oxygen species generated by N_2O decomposition for hydrocarbon activation over Fe-silicalite, E.V. Kondratenko, J. Pérez-Ramírez, *Appl. Catal., B* **2006**, 64, 35-41 (doi:10.1016/j.apcatb.2005.10.019)

Modelling of the high-temperature catalytic partial oxidation of methane over platinum gauze. Detailed gas-phase and surface chemistries coupled with 3D flow field simulations, R. Quiceno, O. Deutschmann, J. Warnatz, J. Pérez-Ramírez, *Appl. Catal., A* **2006**, 303, 166-176 (doi:10.1016/j.apcata.2006.01.041)

Thermal decomposition of hydrotalcite-like compounds studied by a Tapered Element Oscillating Microbalance (TEOM). Comparison with TGA and DTA, J. Pérez-Ramírez, S. Abelló, *Thermochim. Acta* **2006**, 444, 74-82 (doi:10.1016/j.tca.2006.02.031)

Activity of commercial zeolites with iron impurities in direct N_2O decomposition, A.H. Øygarden, J. Pérez-Ramírez, *Appl. Catal., B* **2006**, 65, 163-167 (doi:10.1016/j.apcatb.2006.03.002)

In-line dispersion-precipitation method for the synthesis of metal-substituted dawsonites. Genesis of oxide materials with superior properties, M. Santiago, M.S. Yalfani, J. Pérez-Ramírez, *J. Mater. Chem.* **2006**, 16, 2886-2889 (doi:10.1039/B607031K)

Application of mercury intrusion porosimetry for characterization of combined micro- and mesoporous zeolites, J.C. Groen, S. Brouwer, L.A.A. Peffer, J. Pérez-Ramírez, *Part. Part. Syst. Charact.* **2006**, 23, 101-106 (doi:10.1002/ppsc.200601010)

Iron site modification upon alkaline-treatment of Fe-ZSM-5 zeolites. Opportunities for improved N_2O decomposition activity, J.C. Groen, A. Brückner, E. Berrier, L. Maldonado, J.A. Moulijn, J. Pérez-Ramírez, *J. Catal.* **2006**, 243, 212-216 (doi:10.1016/j.jcat.2006.07.001)

Tuning nanomaterials' characteristics by a miniaturized in line dispersion-precipitation method: application to hydrotalcite synthesis, S. Abelló, J. Pérez-Ramírez, *Adv. Mater.* **2006**, 18, 2436-2439 (doi:10.1002/adma.200600673)

Alkaline treatment of iron-containing MFI zeolites. Influence on mesoporosity development and iron speciation, J.C. Groen, L. Maldonado, E. Berrier, A. Brückner, J.A. Moulijn, J. Pérez-Ramírez *J. Phys. Chem. B* **2006**, 110, 20369-20378 (doi:10.1021/jp0643193)

Mechanism and kinetics of direct N_2O decomposition over Fe-MFI zeolites with different iron speciation from Temporal Analysis of Products, E.V. Kondratenko, J. Pérez-Ramírez, *J. Phys. Chem. B* **2006**, 110, 22586-22595 (doi:10.1021/jp063492w)

Steam activation of Mg-Al hydrotalcite. Influence on the properties of the derived mixed oxides, S. Abelló, J. Pérez-Ramírez, *Microporous Mesoporous Mater.* **2006**, 96, 102-108 (doi:10.1016/j.micromeso.2006.06.018)

Impact of the preparation method and iron impurities in Fe-ZSM-5 zeolites for propylene production via propane oxidative dehydrogenation with N_2O, J. Pérez-Ramírez, A. Gallardo-Llamas, *Appl. Catal., A* **2005**, 279, 117-123 (doi:10.1016/j.apcata.2004.10.020)

Aldol condensations over reconstructed Mg-Al hydrotalcites. Structure-activity relationships related to the rehydratation method, S. Abelló, F. Medina, D. Tichit, J. Pérez-Ramírez, J.C. Groen, J.E. Suerias, P. Salagre, Y. Cesteros, *Chem. Eur. J.* **2005**, 11, 728-739 (doi:10.1002/chem.200400409)

Perovskite membranes in ammonia oxidation. Towards process intensification in nitric acid manufacture, J. Pérez-Ramírez, B. Vigeland, *Angew. Chem., Int. Ed.* **2005**, 44, 1136-1139 (doi:10.1002/anie.200462024); *Angew. Chem.* **2005**, 117, 1136-1139 (doi: 10.1002/ange.200462024)

Cyclic process for propylene production via oxidative dehydrogenation of propane with N_2O over FeZSM-5, A. Gallardo-Llamas, C. Mirodatos, J. Pérez-Ramírez, *Ind. Eng. Chem. Res.* **2005**, 44, 455-462 (doi:10.1021/ie0493863)

Selectivity-directing factors of ammonia oxidation over PGM gauzes in the Temporal Analysis of Products reactor: Secondary interactions of NH_3 and NO, J. Pérez-Ramírez, E.V. Kondratenko, V.A. Kondratenko, M. Baerns, *J. Catal.* **2005**, 229, 303-313 (doi:10.1016/j.jcat.2004.09.020)

Study of alkaline-doping agents on the performance of reconstructed Mg-Al hydrotalcites in aldol condensations, S. Abelló, F. Medina, D. Tichit, J. Pérez-Ramírez, X. Rodríguez, J.E. Suerias, P. Salagre, Y. Cesteros, *Appl. Catal. A* **2005**, 281, 191-198 (doi:10.1016/j.apcata.2004.11.037)

Nanoplatelet-based reconstructed hydrotalcites: towards more efficient solid base catalysts in aldol condensations, S. Abelló, F. Medina, D. Tichit, J. Pérez-Ramírez, Y. Cesteros, P. Salagre, J.E. Sueiras, *Chem. Commun.* **2005**, 1453-1455 (doi:10.1039/B417322H)

Structure and catalytic processes of N-containing species on Rh(111) from first principles, J.M. Ricart, F. Ample, A. Clotet, J.W. Niemantsverdriet, J.-F. Paul, J. Pérez-Ramírez, *J. Catal.* **2005**, 232, 179-185 (doi:10.1016/j.jcat.2005.03.010)

Evolution of isomorphously substituted iron zeolites during activation: Fe-beta vs Fe-ZSM-5, J. Pérez-Ramírez, J.C. Groen, A. Brückner, M.S. Kumar, N.M. Debbagh, U. Bentrup, L.A. Villaescusa, *J. Catal.* **2005**, 232, 318-334 (doi:10.1016/j.jcat.2005.03.018)

Transient studies on the mechanism of N_2O activation and reaction with CO and C_3H_8 over Fe-silicalite, J. Pérez-Ramírez, E.V. Kondratenko, N.M. Debbagh, *J. Catal.* **2005**, 233, 442-452 (doi:10.1016/j.jcat.2005.05.014)

Mechanism of hierarchical porosity development in MFI zeolites by desilication: The role of aluminium as a pore-directing agent, J.C. Groen, L.A.A. Peffer, J.A. Moulijn, J. Pérez-Ramírez, *Chem. Eur. J.* **2005**, 11, 4983-4994 (doi:10.1002/chem.200500045)

Transient studies on the effect of oxygen on the high-temperature NO reduction by NH_3 over Pt-Rh gauze, E.V. Kondratenko, J. Pérez-Ramírez, *Appl. Catal., A* **2005**, 289, 97-103 (doi:10.1016/j.apcata.2005.04.017)

Lanthanum ferrite-based membranes in ammonia oxidation. Opportunities for 'pocket-sized' nitric acid plants, J. Pérez-Ramírez, B. Vigeland, *Catal. Today* **2005**, 105, 436-442 (doi:10.1016/j.cattod.2005.06.057)

Creation of hollow zeolite architectures by controlled desilication of Al-zoned ZSM-5 crystals, J.C. Groen, T. Bach, U. Ziese, A.M. Paulaime-van Donk, K.P. de Jong, J.A. Moulijn, J. Pérez-Ramírez, *J. Am. Chem. Soc.* **2005**, 127, 10792-10793 (doi:10.1021/ja052592x)

DFT characterization of adsorbed NH_x species on Pt(100) and Pt(111) surfaces, G. Novell-Leruth, A. Valcárcel, A. Clotet, J.M. Ricart, J. Pérez-Ramírez, *J. Phys. Chem. B* **2005**, 109, 18061-18069 (doi:10.1021/jp051682l)

Framework composition effects on the performance of steam-activated Fe-MFI zeolites for propane oxidation to propylene with N_2O, J. Pérez-Ramírez, A. Gallardo-Llamas, *J. Phys. Chem. B* **2005**, 109, 20529-20538 (doi:10.1021/jp054447b)

Highly efficient Fe-silicalite zeolite in direct propane ammoxidation with N_2O and O_2, J. Pérez-Ramírez, N. Blangenois, P. Ruiz, *Catal. Lett.* **2005**, 104, 163-167 (doi:10.1007/s10562-005-7946-8)

Decoupling mesoporosity formation and acidity modification in ZSM-5 zeolites by sequential desilication-dealumination, J.C. Groen, J.A. Moulijn, J. Pérez-Ramírez, *Microporous Mesoporous Mater.* **2005**, 87, 153-161 (doi:10.1016/j.micromeso.2005.07.050)

Effect of NO on the SCR of N_2O with propane over Fe-zeolites, J. Pérez-Ramírez, F. Kapteijn, *Appl. Catal., B* **2004**, 47, 177-187 (doi:10.1016/j.apcatb.2003.09.002)

Evidences of the origin of N_2O in the high-temperature NH_3 oxidation over Pt-Rh gauze, J. Pérez-Ramírez, E.V. Kondratenko, *Chem. Commun.* **2004**, 376-377 (doi:10.1039/B312685D)

N_2O decomposition over liquid ion-exchanged Fe-BEA catalysts. Correlation between activity and the IR intensity of adsorbed NO at 1874 cm^{-1}, G. Mul, M.W. Zandbergen, F. Kapteijn, J.A. Moulijn, J. Pérez-Ramírez, *Catal. Lett.* **2004**, 93, 113-120 (doi:10.1023/B:CATL.0000016958.22246.83)

On the introduction of intracrystalline mesoporosity in zeolites upon desilication in alkaline medium, J.C. Groen, L.A.A. Peffer, J.A. Moulijn, J. Pérez-Ramírez, *Microporous Mesoporous Mater.* **2004**, 69, 29-34 (doi:10.1016/j.micromeso.2004.01.002)

Reduction of N_2O with CO over FeMFI zeolites. Influence of the preparation method on the iron species and catalytic behavior, J. Pérez-Ramírez, M. Santosh Kumar, A. Brückner, *J. Catal.* **2004**, 223, 13-27 (doi:10.1016/j.jcat.2004.01.007)

N_2O-mediated propane oxidative dehydrogenation over steam-activated iron zeolites, J. Pérez-Ramírez, A. Gallardo-Llamas, *J. Catal.* **2004**, 223, 382-388 (doi:10.1016/j.jcat.2004.02.005)

Oxidative functionalization of propane over FeMFI zeolites. Effect of reaction variables and catalyst constitution on the performance, E.V. Kondratenko, J. Pérez-Ramírez, *Appl. Catal., A* **2004**, 267, 181-189 (doi:10.1016/j.apcata.2004.03.003)

Critical appraisal of mesopore characterization by adsorption analysis, J.C. Groen, J. Pérez-Ramírez, *Appl. Catal., A* **2004**, 268, 120-124 (doi:10.1016/j.apcata.2004.03.031)

Mechanism and kinetics of the selective NO reduction over Co-ZSM-5 studied by the SSITKA technique. Part 2: Reactivity of adsorbed NO_x species with methane, E.M. Sadovskaya, A.P. Suknev, L.G. Pinaeva, V.B. Goncharov, B.S. Bal'zhinimaev, C. Chupin, J. Pérez-Ramírez, C. Mirodatos, *J. Catal.* **2004**, 225, 179-189 (doi:10.1016/j.jcat.2004.03.032)

Selectivity-directing factors of ammonia oxidation over PGM gauzes in the Temporal Analysis of Products reactor: Primary interactions of NH_3 and O_2, J. Pérez-Ramírez, E.V. Kondratenko, V.A. Kondratenko, M. Baerns, *J. Catal.* **2004**, 227, 90-100 (doi:10.1016/j.jcat.2004.06.023)

Mesoporosity development in ZSM-5 zeolite upon optimized desilication conditions in alkaline medium, J.C. Groen, L.A.A. Peffer, J.A. Moulijn, J. Pérez-Ramírez, *Colloid Surface A* **2004**, 241, 53-58 (doi:10.1016/j.colsurfa.2004.04.012)

Optimal aluminium-assisted mesoporosity development in MFI zeolites by desilication, J.C. Groen, J.C. Jansen, J.A. Moulijn, J. Pérez-Ramírez, *J. Phys. Chem. B* **2004**, 108, 13062-13065 (doi:10.1021/jp047194f)

Catalytic conversion of N_2O over FeZSM-5 zeolite in the presence of CO and NO, M.N. Debbagh Boutarbouch, J.M. García Cortés, M. Soussi El Begrani, C. Salinas Martínez de Lecea, J. Pérez-Ramírez, *Appl. Catal. B,* **2004**, 54, 115-123 (doi:10.1016/j.apcatb.2004.06.013)

Active iron sites associated with the reaction mechanism of N_2O conversions over steam-activated FeMFI zeolites, J. Pérez-Ramírez, *J. Catal.* **2004**, 227, 512-522 (doi:10.1016/j.jcat.2004.08.005)

N_2O-mediated propane oxidative dehydrogenation over Fe-zeolites. TEOM studies for continuous propylene production in a cyclically-operated reactor, J. Pérez-Ramírez, A. Gallardo-Llamas, C. Daniel, C. Mirodatos, *Chem. Eng. Sci.* **2004**, 59, 5535-5543 (doi:10.1016/j.ces.2004.07.035)

Theoretical studies of N_2O adsorption and reactivity to N_2 and NO on Rh(111), J.-F. Paul, J. Pérez-Ramírez, F. Ample, J.M. Ricart, *J. Phys. Chem. B* **2004**, 108, 17921-17927 (doi:10.1021/jp048138h)

Steam-activated FeMFI zeolites. Evolution of iron species and activity in direct N_2O decomposition, J. Pérez-Ramírez, F. Kapteijn, J.C. Groen, A. Doménech, G. Mul, J.A. Moulijn, *J. Catal.* **2003**, 214, 33-45 (doi:10.1016/S0021-9517(02)00021-0)

Structural and activity changes in Pt-beta catalysts during deNO_x HC-SCR, J.M. García-Cortés, J. Pérez-Ramírez, M.J. Illán-Gómez, C. Salinas-Martínez de Lecea, *Catal. Commun.* **2003**, 4, 165-170 (doi:10.1016/S0021-9517(03)00088-5)

Active site structure sensitivity in N_2O conversion over FeMFI zeolites, J. Pérez-Ramírez, F. Kapteijn, A. Brückner, *J. Catal.* **2003**, 218, 234-238 (doi:10.1016/S0021-9517(03)00087-3)

On the activation of Pt/Al_2O_3 catalysts in lean deNO_x by sintering: Titration of active sites using Multitrack, A.R. Vaccaro, G. Mul, J. Pérez-Ramírez, J.A. Moulijn, *Appl. Catal., B* **2003**, 46, 687-702 (doi:10.1016/S0926-3373(03)00271-6)

On the structure sensitivity of the SCR of NO_x with hydrocarbons over Pt-beta catalysts, J.M. García-Cortés, J. Pérez-Ramírez, A.R. Vaccaro, J.N. Rozaud, M.J. Illán-Gómez, C. Salinas-Martínez de Lecea, *J. Catal.* **2003**, 218, 111-122 (doi:10.1016/S0021-9517(03)00088-5)

Elucidation of the surprising role of NO on N_2O conversions over FeMFI zeolites, J. Pérez-Ramírez, G. Mul, F. Kapteijn, J.A. Moulijn, *Kinet. Catal.* **2003**, 44, 639-647 (doi:10.1023/A:1026189905517)

Effect of NO on the catalytic removal of N_2O over FeZSM-5. Friend of foe, J. Pérez-Ramírez, F. Kapteijn, *Catal. Commun.* **2003**, 4, 333-338 (doi:10.1016/S1566-7367(03)00083-9)

Transient study during direct N_2O decomposition over Pt-Rh gauze catalyst. Mechanistic and kinetic aspects of oxygen formation, E.V. Kondratenko, J. Pérez-Ramírez, *Catal. Lett.* **2003**, 91, 211-216 (doi:10.1023/B:CATL.0000007157.87417.fe)

38.Steam-activated FeMFI zeolites as highly efficient catalysts for propane and N_2O valorisation via oxidative conversions, J. Pérez-Ramírez, E.V. Kondratenko, *Chem. Commun.* **2003**, 2152-2153 (doi:10.1039/B305568J)

Pore size determination in modified micro- and mesoporous materials. Pitfalls and limitations in gas adsorption data analysis, J.C. Groen, L.A.A. Peffer, J. Pérez-Ramírez, *Micropororous Mesoporous Mater.* **2003**, 60, 1-17 (doi:10.1016/S1387-1811(03)00339-1)

High-throughput experimentation in catalyst testing and in kinetic studies for heterogeneous catalysis, J.A. Moulijn, J. Pérez-Ramírez, R.J. Berger, G. Hamminga, G. Mul, F. Kapteijn, *Catal. Today* **2003**, 81, 457-471 (doi:10.1016/S0920-5861(03)00145-7)

Formation and control of N_2O in nitric acid production. Where do we stand today?, J. Pérez-Ramírez, F. Kapteijn, K. Schöffel, J.A. Moulijn, *Appl. Catal., B* **2003**, 44, 117-151 (doi:10.1016/S0926-3373(03)00026-2)

Catalyst performance testing: The influence of bed dilution on the conversion observed, R.J. Berger, J. Pérez-Ramírez, F. Kapteijn, J.A. Moulijn, *Chem. Eng. J.* **2002**, 90, 173-183 (doi:10.1016/S1385-8947(02)00078-5)

Ex-framework FeZSM-5 for control of N_2O in simulated tail-gases, J. Pérez-Ramírez, G. Mul, F. Kapteijn, X. Xu, J.A. Moulijn, *Catal. Today* **2002**, 76, 55-74 (doi:10.1016/S0920-5861(02)00208-0)

Catalyst performance testing. Bed dilution revisited, R.J. Berger, J. Pérez-Ramírez, F. Kapteijn, J.A. Moulijn, *Chem. Eng. Sci.* **2002**, 57, 4921-4932 (doi:10.1016/S0009-2509(02)00273-7)

Magnetic properties of Co-Al, Ni-Al, and Mg-Al hydrotalcites and their thermally decomposed products, J. Pérez-Ramírez, A. Ribera, F. Kapteijn, E. Coronado, C.J. Gómez, *J. Mater. Chem.* **2002**, 12, 2370-2375 (doi:10.1039/B110314H)

NO-assisted N_2O decomposition over Fe-based catalysts. Effects of feed composition and catalyst constitution, J. Pérez-Ramírez, F. Kapteijn, G. Mul, J.A. Moulijn, *J. Catal.* **2002**, 208, 211-223 (doi:10.1006/jcat.2002.3559)

NO adsorption on [Fe]MFI catalysts. Novel IR bands and evaluation of assignments, G. Mul, J. Pérez-Ramírez, F. Kapteijn, J.A. Moulijn, *Catal. Lett.* **2002**, 80, 129-138 (doi:10.1023/A:1015456308687)

Adsorption of N_2O over silicalite-1, J.C. Groen, J. Pérez-Ramírez, W. Zhu, *J. Chem. Eng. Data* **2002**, 47, 587-589 (doi:10.1021/je015527l)

Characterization of iron species in ex-framework FeZSM-5 catalyst by electrochemical methods, A. Doménech, J. Pérez-Ramírez, A. Ribera, G. Mul, F. Kapteijn, J.A. Moulijn, *Catal. Lett.* **2002**, 78, 303-312 (doi:10.1023/A:1014937424671)

Physico-chemical characterization of FeZSM-5 during activation, J. Pérez-Ramírez, G. Mul, F. Kapteijn, J.A. Moulijn, A.R. Overweg, A. Ribera, I.W.C.E. Arends, *J. Catal.* **2002**, 207, 113-126 (doi:10.1006/jcat.2002.3511)

Direct N_2O decomposition over ex-framework FeMFI catalysts. Role of extra-framework species, J. Pérez-Ramírez, F. Kapteijn, G. Mul, J.A. Moulijn, *Catal. Commun.* **2002**, 3, 19-23 (doi:10.1016/S1566-7367(01)00072-3)

Highly active SO2-resistant ex-framework FeZSM-5 for direct N_2O decomposition in tail-gases from combustion processes, J. Pérez-Ramírez, F. Kapteijn, G. Mul, J.A. Moulijn, *Appl. Catal., B* **2002**, 35, 227-234 (doi:10.1016/S0926-3373(01)00259-4)

Electrochemical characterization of iron sites in ex-framework FeZSM-5, A. Doménech, J. Pérez-Ramírez, A. Ribera, G. Mul, F. Kapteijn, I.W.C.E. Arends, *J. Electroanal. Chem.* **2002**, 519, 72-84 (doi:10.1016/S0022-0728(01)00724-0)

Catalyst performance testing. Radial and axial dispersion related to dilution in fixed-bed laboratory reactors, R.J. Berger, J. Pérez-Ramírez, F. Kapteijn, J.A. Moulijn, *Appl. Catal., A* **2002**, 227, 323-335 (doi:10.1016/S0926-860X(01)00950-4)

Formation of uniform mesopores in ZSM-5 zeolite upon alkaline post-treatments?, J.C. Groen, J. Pérez-Ramírez, L.A.A. Peffer, *Chem. Lett.* **2002**, 94-95 (doi:10.1246/cl.2002.94)

Comments on "Vanadium- and chromium-containing mesoporous MCM-41 molecular sieves with hierarchical structure", J.C. Groen, L.A.A. Peffer, J. Pérez-Ramírez, *Microporous Mesoporous Mater.* **2002**, 51, 75-78 (doi:10.1016/S1387-1811(01)00472-3)

A TEOM-MS study on the decomposition of N_2O over a hydrotalcite-derived multimetallic mixed oxide catalyst, M.C. Román-Martínez, F. Kapteijn, D. Cazorla-Amorós, J. Pérez-Ramírez, J.A. Moulijn, *Appl. Catal., A* **2002**, 225, 87-100 (doi:10.1016/S0926-860X(01)00770-0)

Superior performance of the ex-framework FeZSM-5 in catalytic N_2O decomposition in tail-gases from nitric acid plants, J. Pérez-Ramírez, F. Kapteijn, G. Mul, J.A. Moulijn, *Chem. Commun.* **2001**, 693-694 (doi:10.1039/B100953M)

In situ investigation during the thermal decomposition of Co-Al-HTlc in different atmospheres, J. Pérez-Ramírez, G. Mul, F. Kapteijn, J.A. Moulijn, *J. Mater. Chem.* **2001**, 11, 821-830 (doi:10.1039/b009320n)

On the stability of the thermally decomposed Co-Al hydrotalcite against retrotopotactic transformation, J. Pérez-Ramírez, G. Mul, F. Kapteijn, J.A. Moulijn, *Mater. Res. Bull.* **2001**, 36, 1767-1775 (doi:10.1016/S0025-5408(01)00657-2)

A spectroscopic study of the effect of the trivalent cation on the thermal decomposition behaviour Co-based hydrotalcites, J. Pérez-Ramírez, G. Mul, F. Kapteijn, J.A. Moulijn, *J. Mater. Chem.* **2001**, 11, 2529-2536 (doi:10.1039/B104989P)

In situ Fourier Transform infrared and Raman spectroscopic study on the thermal decomposition of Co-Al and Ni-Al hydrotalcites, J. Pérez-Ramírez, G. Mul, F. Kapteijn, J.A. Moulijn, *Vib. Spectroscop.* **2001**, 27, 75-88 (doi:10.1016/S0924-2031(01)00119-9)

Comparative study of Pt-based catalysts on different supports in the low-temperature de-NO_x SCR with propene, J.M. García-Cortés, J. Pérez-Ramírez, M.J. Illán-Gómez, F. Kapteijn, J.A. Moulijn, C. Salinas-Martínez de Lecea, *Appl. Catal., B* **2001**, 30, 399-408 (doi:10.1016/S0926-3373(00)00255-1)

Characterization and performance of Pt-USY in the SCR of NO_x with hydrocarbons under lean-burn conditions, J. Pérez-Ramírez, J.M. García-Cortés, F. Kapteijn, G. Mul, J.A. Moulijn, C. Salinas-Martínez de Lecea, *Appl. Catal., B* **2001**, 29, 285-298 (doi:10.1016/S0926-3373(00)00210-1)

NO-assisted N_2O decomposition over ex-framework FeZSM-5. Mechanistic considerations, G. Mul, J. Pérez-Ramírez, F. Kapteijn, J.A. Moulijn, *Catal. Lett.* **2001**, 77, 7-13 (doi:10.1023/A:1012791129268)

Preparation, characterization and performance of FeZSM-5 for the selective oxidation of benzene to phenol with N_2O, A. Ribera, I.W.C.E. Arends, S. de Vries, J. Pérez-Ramírez, R.A. Sheldon, *J. Catal.* **2000**, 195, 287-297 (doi:10.1006/jcat.2000.2994)

Comments on "Infrared emission spectroscopic studies of the thermal transformation of Mg-, Ni-, and Co-hydrotalcite catalysts", J. Pérez-Ramírez, G. Mul, F. Kapteijn, J.A. Moulijn, *Appl. Catal., A* **2000**, 204, 265-267 (doi:10.1016/S0926-860X(00)00696-7)

Dual-bed catalytic system for NO_x-N_2O removal: a practical application for lean-burn deNO_x HC-SCR, J. Pérez-Ramírez, J.M. García-Cortés, F. Kapteijn, M.J. Illán-Gómez, A. Ribera, C. Salinas-Martínez de Lecea, J.A. Moulijn, *Appl. Catal., B* **2000**, 25, 191-203 (doi:10.1016/S0926-3373(99)00131-9)

Dual-bed catalytic system for the selective reduction of NO_x with propene, J. Pérez-Ramírez, A.R. Vaccaro, F. Kapteijn, J.A. Moulijn, *Chem. Eng. Technol.* **2000**, 23, 721-725 (doi:10.1002/1521-4125(200008)23:8<721::AID-CEAT721>3.0.CO;2-0)

Highly active and stable Pt-USY in the low-temperature de-NO_x HC-SCR, J. Pérez-Ramírez, G. Mul, F. Kapteijn, J.A. Moulijn, *React. Kinet. Catal. Lett.* **2000**, 71, 33-40 (doi:10.1023/A:1010365628369)

Reduction of NO by propene over Pt, Pd and Rh-based ZSM-5 under lean-burn conditions, J. Pérez-Ramírez, J.M. García-Cortés, M.J. Illán-Gómez, F. Kapteijn, J.A. Moulijn, C. Salinas-Martínez de Lecea, *React. Kinet. Catal. Lett.* **2000**, 69, 385-392 (doi:10.1023/A:1005680707127)

Effect of the support in de-NO_x HC-SCR over transition metal catalysts, J.M. García-Cortés, J. Pérez-Ramírez, M.J. Ilán-Gómez, F. Kapteijn, J.A. Moulijn, C. Salinas-Martínez de Lecea, *React. Kinet. Catal. Lett.* **2000**, 70, 199-206 (doi:10.1023/A:1010347726288)

The six-flow reactor technology. A review on fast catalyst screening and kinetic studies, J. Pérez-Ramírez, R.J. Berger, G. Mul, F. Kapteijn, J.A. Moulijn, *Catal. Today* **2000**, 60, 93-109 (doi:10.1016/S0920-5861(00)00321-7)

Structural promotion and stabilizing effect of Mg in the catalytic decomposition of nitrous oxide over calcined hydrotalcite-like compounds, J. Pérez-Ramírez, J. Overeijnder, F. Kapteijn, J.A. Moulijn, *Appl. Catal., B* **1999**, 23, 59-72 (doi:10.1016/S0926-3373(99)00066-1)

High activity and stability of the Rh-free Co-based ex-hydrotalcite containing Pd in the catalytic decomposition of N_2O, J. Pérez-Ramírez, F. Kapteijn, J.A. Moulijn, *Catal. Lett.* **1999**, 60, 133-138 (doi:10.1023/A:1019011124950)

Other Journal Publications

Mechanistic understanding of halogen-mediated catalytic processes for selective natural gas functionalization, G. Zichittella, V. Paunović, J. Pérez-Ramírez, *Chimia* **2019**, 73, 288-293 (doi:10.2533/chimia.2019.288)

Single atom catalysis, S. Mitchell, J. M. Thomas, J. Pérez-Ramírez, *Catal. Sci. Technol.* **2017**, 7, 4248-4249 (doi:10.1039/c7cy90090b)

Halogen chemistry on catalytic surfaces, M. Moser, J. Pérez-Ramírez, *Chimia* **2016**, 70, 274-278 (doi:10.2533/chimia.2016.274)

Invited book review 'Principles and practice of heterogeneous catalysis, second completely revised edition', J. Pérez-Ramírez, S. Mitchell, *Angew. Chem. Int. Ed.* **2015**, 54, 6680-6681 (doi:10.1002/anie.201503261); *Angew. Chem.* **2015**, 127, 6780-6781 (doi:10.1002/ange.201503261)

Porosity: the hegemony of empty space in functional materials design, J. Pérez-Ramírez, *Adv. Funct. Mater.* **2014**, 24, 180-181 (doi:10.1002/adfm.201303849)

Invited book review 'Design and applications of single-site heterogeneous catalysts. Contributions to green chemistry, clean technology and sustainability', J. Pérez-Ramírez, *Angew. Chem. Int. Ed.* **2013**, 52, 9892-9893 (doi:10.1002/anie.201306646); *Angew. Chem.* **2013**, 125, 10076-10077 (doi:10.1002/ange.201306646)

Zeolite nanosystems: Imagination has no limits, J. Pérez-Ramírez, *Nat. Chem.* **2012**, 4, 250-251 (doi:10.1038/nchem.1310)

Development of industrial catalysts for sustainable chlorine production, C. Mondelli, A.P. Amrute, M. Moser, T. Schmidt, J. Pérez-Ramírez, *Chimia* **2012**, 66, 694-698 (doi:10.2533/chimia.2012.694)

Virtual issue on catalysis at ETH Zurich, J. Pérez-Ramírez, *ACS Catal.* **2012**, 2, 1792 (doi:10.1021/cs300412e)

Jenseits des Gewohnten, D. Verboekend, S. Mitchell, J. Pérez-Ramírez, *Chemie&more* **2012**, 168, 1-2

Editorial 'Hierarchical zeolites in catalysis', J Pérez-Ramírez, C.H. Christensen, *Catal. Today* **2011**, 168, 1-2 (doi:10.1016/j.cattod.2011.01.004)

Hierarchical porous zeolites in catalysis: next stop industrial demonstrations, J. Pérez-Ramírez, *The Catalyst Review* **2010**, 23, 6

The TAP reactor in catalysis. Recent advances in theory and practise, E.V. Kondratenko, J. Pérez-Ramírez, *Catal. Today* **2007**, 121, 159 (doi:10.1016/j.cattod.2006.07.002)

On the role of iron in preparation of mesoporous Fe-MFI zeolites via desilication, J.C. Groen, L. Maldonado, J.A. Moulijn, J. Pérez-Ramírez, *Stud. Surf. Sci. Catal.* **2006**, 162, 267-274 (doi:10.1016/S0167-2991(06)80916-X)

Role of intrinsic zeolite properties on mesopore formation during desilication of MFI, J.C. Groen, L.A. Peffer, J.C. Jansen, J.A. Moulijn, J. Pérez-Ramírez, *Stud. Surf. Sci. Catal.* **2005**, 156, 401-408 (doi:10.1016/S0167-2991(05)80235-6)

Catalysis engineering on three levels, J.A. Moulijn, J. Pérez-Ramírez, A. van Diepen, M.T. Kreutzer, F. Kapteijn, *Int. J. Chem. React. Eng.* **2003**, vol. 1:R4 (doi:10.2202/1542-6580.1093)

Thermal decomposition of Co-Al hydrotalcite: an in situ spectroscopic study, J. Pérez-Ramírez, G. Mul, F. Kapteijn, J.A. Moulijn, *A Clay Odyssey* **2003**, 631-638 - Elsevier

Structure-activity relationships in N_2O conversion over FeMFI zeolites. Preparation of catalysts with a well-defined distribution of iron species, J. Pérez-Ramírez, A. Brückner, M.S. Kumar, F. Kapteijn, *Catalysis in Application*, **2003**, 308-313 - Royal Society of Chemistry

Incorporation of appropriate contact angles in textural characterization by mercury porosimetry, J.C. Groen, L.A. Peffer, J. Pérez-Ramírez, *Stud. Surf. Sci. Catal.* **2002**, 144, 91-98 (doi:10.1016/S0167-2991(02)80224-5)

Characterization and performance of ex-framework FeZSM-5 in catalytic N_2O decomposition, J. Pérez-Ramírez, G. Mul, F. Kapteijn, A. Ribera, I.W.C.E. Arends, J.A. Moulijn, *Stud. Surf. Sci. Catal.* **2001**, 135, 4868-4875

Different chemisorption methods applied to zeolite supported Pt-catalysts, J.C. Groen, J. Pérez-Ramírez, L.A. Peffer, *Stud. Surf. Sci. Catal.* **2001**, 135, 2862-2869 (doi:10.1016/S0167-2991(01)81452-X)

Book Chapters

Hierarchical Porous Zeolites by Demetallation, J.C. Groen, J. Pérez-Ramírez, in A. Cybulsky, J.A. Moulijn, A. Stankiewicz (Eds), Novel Concepts in Catalysis and Chemical Reactors, Wiley, **2010**, pp. 31-50 (ISBN-10 3527324690)

Spectroscopy and Reactivity of Molecules on Metal Surfaces from DFT Calculations, A. Valcárcel, G. Novell-Leruth, A. Clotet, J. Pérez-Ramírez, J.M. Ricart, in V.A. Basiuk, P. Ugliengo (Eds.), Quantum Chemical Calculations of Surfaces and Interfaces of Materials, American Scientific Publishers, **2010**, pp. 25-40 (ISBN 1-58883-138-8)

Catalysis by gold containing systems: selectivity is the key, M. García-Mota, J. Gómez-Díaz, J. Pérez-Ramírez, N. López, in V.A. Basiuk, P. Ugliengo (Eds.), Quantum Chemical Calculations of Surfaces and Interfaces of Materials, American Scientific Publishers, **2010**, pp. 55-62 (ISBN 1-58883-138-8)

Nanostructured oxides in deNO_x technologies, M. Fernández-García, A. Martínez-Arias, J. Pérez-Ramírez, in J.A. Rodríguez, M. Fernández-Martínez (Eds.), Synthesis, Properties, and Applications of Oxide Nanomaterials, Wiley, **2007**, pp. 603-632 (ISBN 978-0-471-72405-6)

Dual-bed catalytic system for removal of NO_x-N_2O in lean-burn engine exhausts: a systematic approach to optimise the N_2 selectivity, A.R. Vaccaro, J. Pérez-Ramírez, J.M. García-Cortés, C. Salinas-Martinez de Lecea, G. Mul, F. Kapteijn, J.A. Moulijn, in M.M. Maroto-Valer, C. Song, Y. Soong (Eds.), Environmental Challenges and Greenhouse Gas Control for Fossil Fuel Utilization in the 21st Century, Kluwer Academic, **2002**, pp. 229-243 (ISBN 0-306-47336-4)

Conference Proceedings

Structure dependence of Pt surface activated ammonia oxidation, R.A. van Santen, W.K. Offermans, J.M. Ricart, G. Novell-Leruth, J. Pérez-Ramírez, *Journal of Physics: Conference Series* **2008**, 117, 012028 (doi:10.1088/1742-6596/117/1/012028)

Greening up catalysis – from catalyst preparation to application in N_2O abatement, I.V. Melián-Cabrera, F. Kapteijn, J. Pérez-Ramírez, J.A. Moulijn, *Proceedings of the International Symposium on Sustainable Materials Engineering*, **2004**, 89-95

Dual-bed catalyst system for NO_x-N_2O removal in the lean-burn deNO_x HC-SCR, J. Pérez-Ramírez, F. Kapteijn, G. Mul, J.A. Moulijn, *Preprints of Symposia* **2001**, 46, 72-74 - American Chemical Society, Division of Fuel Chemistry

Catalytic N_2O decomposition in a model tail gas from nitric acid plants, X. Xu, J. Pérez-Ramírez, G. Mul, A.R. Vaccaro, F. Kapteijn, J.A. Moulijn, *Preprints of Symposia* **2001**, 46, 85-87 - American Chemical Society, Division of Fuel Chemistry

Ex-framework FeZSM-5. An efficient catalyst for removal and reutilization of N_2O, J. Pérez-Ramírez, A. Ribera, G. Mul, F. Kapteijn, I.W.C.E. Arends, J.A. Moulijn, *Preprints of Symposia* **2001**, 46, 106-107 - American Chemical Society, Division of Fuel Chemistry

Co-based ex-HTlcs for the decomposition of N_2O: Tailoring catalysts for active and stable operation, J. Pérez-Ramírez, G. Mul, X. Xu, F. Kapteijn, J.A. Moulijn, *Stud. Surf. Sci. Catal.* **2000**, 130, 1445-1450 - 12th International Conference on Catalysis

Guest Editor of Themed Issues

Single atom catalysis, *Catal. Sci. Technol.* **2017**, 7, 4248-4249 (doi:10.1039/c7cy90090b, with S. Mitchell and J.M. Thomas)

Porosity: The hegemony of empty space in functional materials design, *Adv. Funct. Mater.* **2014**, 24, 180-181 (doi:10.1002/adfm.201303849)

Virtual issue on catalysis at ETH Zurich, *ACS Catal.* **2012**, 2, 1792 (doi:10.1021/cs300412e)

Heterogeneous catalysis in Switzerland, *Chimia*, **2012**, 66, 661 (with D. Ferri. L. Kiwi-Minsker, and J.A. van Bokhoven)

Hierarchical zeolites in catalysis, *Catal. Today* **2011**, 168, 1-2 (doi:10.1016/j.cattod.2011.01.004, with C.H. Christensen)

The TAP reactor in catalysis - Recent advances in theory and practise, *Catal. Today* **2007**, 121, 159 (doi:10.1016/j.cattod.2006.07.002, with E.V. Kondratenko)

Patents and Patents Applications

T. Netscher, J. Medlock, R. Lin, S. Mitchell, J. Pérez-Ramírez, Rearrangement of dimethylphenylacylates using zeolites, **2020**, case 33658-EP-EPA

J. Pérez-Ramírez, C. Mondelli, M. Frei, J.A. Stewart, D. Curulla Ferré, Noble metal promoted supported indium oxide catalyst for the hydrogenation of CO_2 to methanol and process using said catalyst, **2020**, WO2020/049071-A1

J. Pérez-Ramírez, C. Mondelli, M. Frei, J.A. Stewart, D. Curulla Ferré, Noble metal-promoted In_2O_3 catalyst for the hydrogenation of CO_2 to methanol, **2020**, WO2020/049082-A1

S. Wershofen, A. Vidal-Ferran, J.L. Nuñez-Rico, J. Pérez-Ramírez, B. Puértolas Lacambra, A.P. Amrute, Catalyst useful for producing carbamate compound, preferably aromatic carbamate for producing isocyanate, comprises binary oxide, **2019**, WO2019185608-A1

J. Pérez-Ramírez, C. Mondelli, H.T. Luk, J.A. Stewart, D. Curulla Ferré, Process using catalytic composition for the conversion of syngas to higher alcohols, **2019**, EP19305122.4

J. Pérez-Ramírez, C. Mondelli, H.T. Luk, J.A. Stewart, D. Curulla Ferré, Copper-iron-based catalytic composition comprising zeolites, method for producing such catalytic composition and process using such catalytic composition for the conversion of syngas to higher alcohols, **2019**, EP19305121.6

J. Pérez-Ramírez, C. Mondelli, H.T. Luk, J.A. Stewart, D. Curulla Ferré, Copper-iron based catalytic composition for the conversion of syngas to higher alcohols and process using such catalyst composition, **2018**, EP18305922.9

J. Pérez-Ramírez. F.J.A.G. Coumans, S. Mitchell, J. Schütz, J. Medlock, Process for the selective acylation of primary hydroxy groups in the presence of secondary hydroxy groups and catalyst therefor, **2018**, EP18181256.1

J. Pérez-Ramírez, A.P. Amrute, A catalyst composition for direct synthesis of vinyl chloride from ethylene, **2018**, WO2018015363

J. Arras, T.C. Keller, J. Pérez-Ramírez, Process for the preparation of di and polyamines of diphenylmethane series, **2018**, US2018002271

J. Pérez-Ramírez, O. Martin, A.J. Martín, C. Mondelli, D. Curulla-Ferré, C. Drouilly, Process for methanol synthesis using an indium oxide based catalyst, **2017**, WO2017118573

J. Pérez-Ramírez, O. Martin, A.J. Martín, C. Mondelli, D. Curulla-Ferré, C. Drouilly, Supported indium oxide catalysts and process for methanol synthesis using the same, **2017**, WO2017118572

J. Arras, S. Wershofen, T.C. Keller, J. Pérez-Ramírez, Process for the preparation of di and polyamines of diphenylmethane series, **2016**, WO2016005269-A1

T. Schmidt, A. Wolf, O.F.-K. Schlüter, T. Westermann, C. Mondelli, J. Pérez-Ramírez, H. Soerijanto, R. Schomäcker, D. Teschner, R. Schlögl, Process for the production of chlorine using a cerium oxide catalyst in an isothermic reactor, **2013**, WO2013004651

T. Schmidt, A. Wolf, O. F.-K. Schlüter, T. Westermann, C. Mondelli, J. Pérez-Ramírez, H. Soerijanto, R. Schomäcker, D. Teschner, R. Schlögl, Process for the production of chlorine using a cerium oxide catalyst in an adiabatic reaction cascade, **2013**, WO2013004649

J. Pérez-Ramírez, J. Gomez-Segura, Catalyst for chlorine production, **2011**, WO2011104112

J. Pérez-Ramírez, J. Gomez-Segura, Catalyst for chlorine production comprising a copper aluminate of the spinel type, **2010**, WO2010149286

J.C. Groen, J.A. Moulijn, J. Pérez-Ramírez, Mesoporous mordenite, preparation and the use thereof, **2008**, WO2008147190

J. Pérez-Ramírez, Y. Segura, Gold-based catalysts for the selective hydrogenation of unsaturated compounds, **2008**, WO2008107445

J. Pérez-Ramírez, S. Abelló Cros, M. Santiago Redondo, A process for the preparation of uniform nano-sized solid materials by continuous precipitation, **2007**, WO2007147881

J. Pérez-Ramírez, B. Vigeland, S. Julsrud, Catalytic membrane reactor for the oxidation of NH_3 to NO, and method for the oxidation of NH3 to NO, **2006**, WO2006041300

J. Pérez-Ramírez, Catalyst packing, a structured fixed bed reactor and use, **2006**, WO2006009453

J. Pérez-Ramírez, A. Gallardo-Llamas, Method and apparatus for N_2O-mediated oxidative dehydrogenation of alkanes to alkenes over iron zeolites, **2005**, WO2005105711

A.H. Øygarden, J. Pérez-Ramírez, D. Waller, K. Schöffel, D.M. Brackenbury, Method for producing supported oxide catalysts, **2004**, WO2004110622

J. Pérez-Ramírez, Method for preparation and activation of multimetallic zeolite catalysts, a catalyst composition and application for N_2O abatement, **2004**, WO2004047960

Supervision of Research Work

Doctoral Theses

Guido Zichittella, Alkane activation by catalytic oxyhalogenation, ETH Zurich, 11th December **2019**

Ho Ting Luk, Multicomponent catalytic systems for syngas conversion into higher alcohols, ETH Zurich, 4th December **2019**

Evgeniya Vorobyeva, Carbon nitride as a platform for metal atoms and low-nuclearity clusters, ETH Zurich, 20th November **2019**

Matthias Scharfe, Catalytic processes for intensified vinyl chloride production, ETH Zurich, 30th October **2019**

Davide Albani, Ensemble design in heterogeneous catalysts for selective hydrogenation, ETH Zurich, 21st November **2018**

Vladimir Paunović, Catalytic processes for natural gas valorization via bromine chemistry, ETH Zurich, 4th April **2018**

Gastón Larrazábal, Transition metal-based catalysts modified with p-block elements for the electrochemical reduction of CO_2, ETH Zurich, 6th December **2017**

Giacomo Lari, Chemocatalytic technologies towards the glycerol biorefinery, ETH Zurich, 18th October **2017**

Tobias C. Keller, Tailored aluminosilicate catalysts for sustainable polymer and fuel production, ETH Zurich, 26th October **2016**

Oliver Martin, Novel materials for CO_2 capture and conversion to methanol, ETH Zurich, 4th May **2016**

Maximilian Moser, Bridging HCl and HBr oxidation over heterogeneous catalysts for halogen production, ETH Zurich, 9th December **2015**

Gianvito Vilé, Design of new nanostructured catalysts for selective hydrogenations in flow, ETH Zurich, 4th November **2015**

Pierre-Yves Dapsens d'Yvoir, Tailored Lewis-acid zeolites for the production of bio-based chemicals, ETH Zurich, 10th June **2015**

Nina-Luisa Michels, From powder to technical body: Structured zeolite catalysts with enhanced functionality, ETH Zurich, 17th December **2014**

Maria Milina, Property-function interplay in the design of hierarchical zeolite catalysts, ETH Zurich, 1st October **2014**

Amol P. Amrute, Deacon chemistry revisited: new catalysts for chlorine recycling, ETH Zurich, 9th October **2013**

Danny Verboekend, New hierarchical zeolite catalysts by post-synthetic design, ETH Zurich, 10th October **2012**

Blaise Bridier, Selective hydrogenation of alkynes - catalyst design aided by molecular understanding, ETH Zurich, 14th March **2012**

Marta Santiago, Hexaaluminate-type catalysts for N_2O abatement, Universitat Rovira i Virgili, 29th September **2010**

Georgiana Stoica, Chemistry of dawsonites and application in catalysis, Universitat Rovira i Virgili, 18th February **2010**

Gerard Novell-Leruth, Catalytic ammonia oxidation on noble metal surfaces: A theoretical approach, Universitat Rovira i Virgili, 15th November **2008**

Jozef C. Groen, Mesoporous zeolites obtained by desilication, Delft University of Technology, 26th June **2007**

Mohammed N. Debbagh, Catalytic conversions of nitrogen oxides over transition metal zeolites, Université Abdelmalek Essaadi, 21st April **2007**

Master Theses

Arjun Shah, Sensitivity of indium oxide-based CO_2 hydrogenation catalysts to CO (*ongoing*), ETH Zurich, **2020**

Spyridon Kanatakis, Impact of carrier on the Pd_3S-catalyzed alkyne hydrogenation (*ongoing*), ETH Zurich, **2020**

Marion Short, Kinetic fingerprints of CO_2-based synthesis and steam reforming of methanol over heterogeneous catalysts, ETH Zurich, **2020**

Michelle Philipp, Promoter engineering of In_2O_3 catalysts for methanol production via CO_2 hydrogenation, ETH Zurich, **2019**

Gabrijel Novak, CO_2 promotion on higher alcohols synthesis from syngas over copper-iron catalysts, ETH Zurich, **2019**

Dario Faust Akl, Design of low-nuclearity metal catalysts, ETH Zurich, **2019**

Alessia Cesarini, Role of the zirconia carrier on the performance of indium oxide for CO_2 hydrogenation, ETH Zurich, **2019**

Gabriele Manzocchi, Design of noble metal-based catalysts for acetylene hydrochlorination, ETH Zurich, **2019**

Klara S. Key, Pd promoted In_2O_3 catalysts for the direct CO_2 hydrogenation to methanol, ETH Zurich, **2018**

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Giorgio Pastore, Glycerol valorization: towards sustainable bio-refinery processes, ETH Zurich, **2017**

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Matthias S. Frei, Production of acrylic acid from lactic acid on alkaline activated zeolites, ETH Zurich, **2015**

Matthias Scharfe, Stable cerium-based catalysts for the oxychlorination of ethylene, ETH Zurich, **2015**

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Patrick Dähler, Performance of doped ceria catalysts in alkyne hydrogenation, ETH Zurich, **2014**

Kartikeya Desai, Design of basic zeolite catalysts by alkaline activation in alcoholic media and the application in bio-oil deoxygenation, ETH Zurich, **2014**

Isabella Giovinazzo, Production of lactic acid and alkyl lactates over Sn-containing MFI zeolites: from batch to continuous operation, ETH Zurich, **2014**

Anna Beltzung, Design of hierarchical zeolites for the synthesis of methylenedianiline mixtures, ETH Zurich, **2013**

Stéphane Isabettini, Design of hierarchical silica-rich zeolite base catalysts, ETH Zurich, **2013**

Laura Rodríguez-García, Catalysts and hybrid fixed-bed reactors for the gas-phase oxidation of hydrogen halides, ETH Zurich, **2013**

Tobias Keller, Superior base catalysis through hierarchical faujasite zeolites, ETH Zurich, **2012**

Martin Menart, Hierarchical zeolites as efficient catalysts for the conversion of dihydroxyacetone to alkyl lactates, ETH Zurich, **2012**

Tazawa Atsushi, Development of IrO_2-based catalysts in technical form for the gas-phase HCl oxidation, ETH Zurich, **2012**

Jonas Wichert, Selective hydrogenation of acetylene over ceria-based catalysts, ETH Zurich, **2012**

Maximilian Moser, Micro kinetic studies and modeling of the hydrogen chloride oxidation on ceria catalysts, ETH Zurich, **2011**

Gianvito Vilé, Hierarchical zeolite Y and USY obtained by strategic combinations of post-synthetic modifications, ETH Zurich, **2011**

Bachelor Projects

Lucrezia Cartocci, Bimetallic catalysts for acetylene hydrochlorination (*ongoing*), **2020**

Samuel Scheiber, Enhanced higher alcohols synthesis via cascade byproduct upgrading over zeolites, ETH Zurich, **2019**

James Luethi, Alkane functionalization via catalytic oxychlorination: performance as a function of the carbon number, ETH Zurich, **2019**

Oliver Stiz, Design of nickel single-atom catalysts on heteroatom-doped carbons, ETH Zurich, **2019**

Louisa Buttsworth, Impact of carrier acidity in the conversion of syngas to higher alcohols on zeolite-supported copper-iron catalysts, ETH Zurich, **2019**

Kevin Kleemann, Structure-performance relationship of silica-supported transition metal catalysts in the hydrodebromination of dibromomethane, ETH Zurich, **2019**

Lorenz Olbrich, Nanostructured ceria catalysts for ethylene oxychlorination, ETH Zurich, **2019**

Samuel Stähelin, Selective propane-to-propylene via catalyzed oxychlorination over metal phosphates, ETH Zurich, **2019**

Nicola Carrara, Selective alkane oxyhalogenation over supported metal nanoparticles, ETH Zurich, **2018**

Igor Rombaut, Direct higher alcohol synthesis from syngas over copper-iron based catalysts, ETH Zurich, **2018**

Agostino Dall'Ara, Capital cost estimation for the production of glycerol carbonate and 1,2-propanediol using the Guthrie method, ETH Zurich, **2018**

Kevin Zeiter, Investigation of sulfur-modified transition metals for CO_2 reduction, ETH Zurich, **2018**

Martín Artusi, Methane activation through catalytic oxybromination, ETH Zurich, **2018**

Bharath Tata, Selective oxychlorination of ethylene to vinyl chloride, ETH Zurich, **2017**

Dragona Ristanovic, Modelling of the methane oxybromination, ETH Zurich, **2016**

Doohyun Hwang, Higher alcohol synthesis from syngas over carbon-supported CoMo catalysts, ETH Zurich, **2016**

Arthur Brucoli Leme de Moura, Carbonation of glycerol with urea in continuous mode catalyzed by magnesium-aluminum mixed oxides, ETH Zurich, **2016**

Nicolas Aellen, Comparative study of oxybromination and oxychlorination of methane over metal oxide, phosphate and vanadate catalysts, ETH Zurich, **2016**

Lukas Weimann, Towards the continuous carbonation of glycerol with urea, ETH Zurich, **2016**

Rohan Murty, New insights into the pore development mechanism of layered hydroxides upon thermal activation, ETH Zurich, **2016**

Moritz Haus, Finding new applications for the Nanoselect^{TM} catalyst family: conversion of nitriles and aldehydes in a continuous flow reactor, ETH Zurich, **2015**

Ali Saadun, Stability of metallated zeolites in biomass conversion in continuous flow conditions and the development of bifunctional zeolite catalysts for the oxidehydration of glycerol, ETH Zurich, **2015**

Fabian Brüning, Influence of the composition of an industrial catalyst on CO_2-promoted methanol synthesis, ETH Zurich, **2014**

Sarah Correa, Hybrid nanocatalysts for selective hydrogenation of nitroarenes, ETH Zurich, **2014**

Kartikeya Desai, Basic zeolite catalysts for the catalytic deoxygenations of bio-oil, ETH Zurich, **2014**

Matthias Frei, Synthesis and evaluation of Tin containing BEA, FAU, MOR prepared by alkaline assisted stannation, ETH Zurich, **2014**

Olivier Gröninger, Production of mannitol from glucose over epimerization-hydrogenation, ETH Zurich, **2014**

Stefan Reuteler, Insights into the alkaline-assisted metallation process: Location of the active Lewis-acid sites in sugars isomerization, ETH Zurich, **2014**

Sotiria Mostrou, Performance of metal oxide catalysts for bromine recycling, ETH Zurich, **2014**

Gabriele Colombo, Bio-oil upgrading by condensation reactions: Performance of zeolite catalysts in the esterification of acetic acid, ETH Zurich, **2013**

Oliver Ingold, Room-temperature synthesis of metal-organic frameworks from layered double hydroxides, ETH Zurich, **2013**

Jakub Jagielski, A rational approach to the synthesis of the Lindlar catalyst, ETH Zurich, **2013**

Leonard Floryan, Chemo- and Stereoselective Behavior of CeO_2-Based Catalysts for Liquid-Phase Partial Hydrogenation of Alkynes, ETH Zurich, **2013**

Patrick Dähler, Promoted ceria catalysts for alkyne semi-hydrogenation, ETH Zurich, **2012**

Thomas Soltermann, Development of kinetic tools for the investigation of the CO_2 promotion, ETH Zurich, **2012**

Mario Stucki, Chemo-catalytic conversion of biomass to chemicals, ETH Zurich, **2012**

Jose Zhao, Impact of extrusion with silica, alumina, and natural clays on the intrinsic properties of desilicated ZSM-5, ETH Zurich, **2012**

Gastón Larrazábal, $CuCrO_2$-CeO_2 composite for the oxidation of HCl to Cl_2, ETH Zurich, **2012**

Johan Mendez, Hierarchical ZSM-5 zeolites in liquid-phase alkylation of toluene with isopropanol, ETH Zurich, **2012**

Zair Dominguez Trinidad, Catalytic Performance of Hierarchical ZSM-5 Zeolites for Liquid Phase Alkylation, ETH Zurich, **2011**

Maximilian Moser, CeO_2/ZrO_2 catalysts for sustainable hydrogen chloride oxidation, ETH Zurich, **2011**

Mrugendra Kamtikar, Novel approaches for desilication of zeolites, Institute of Chemical Research of Catalonia, Tarragona, Spain, **2008**

Danny Verboekend, Novel catalysts for the selective hydrogenation of triple bonds, Institute of Chemical Research of Catalonia, Tarragona, Spain, **2007**

Ripudaman Manchanda, Memory effect of dawsonite-derived aluminas, Institute of Chemical Research of Catalonia, Tarragona, Spain, **2007**

Vijay Shankar, Reusability and scalability of solid-base catalysts in C-C bond formation reactions, Institute of Chemical Research of Catalonia, Tarragona, Spain, **2007**

Saurabh Dhir, Kinetic analysis of the aldol condensation of citral and acetone over activated hydrotalcites, Institute of Chemical Research of Catalonia, Tarragona, Spain, **2006**

Olga Sánchez Galofré, In situ DRIFTS study of the N_2O-mediated oxidative dehydrogenation of propane, Institute of Chemical Research of Catalonia, **2006**

Lluís Maldonado, Redistribution of iron species in FeZSM-5 upon treatment in alkaline media, Institute of Chemical Research of Catalonia, Tarragona, Spain, **2005**

Selected Projects as Principal Investigator

2020 – 2024 National Center of Competence in Research, Sustainable chemical processes through catalysis, Swiss National Science Foundation

2020 – 2022 Application of machine learning to catalyst design for CO_2 to methanol, TOTAL Raffinage Chimie, Belgium

2019 – 2022 Microstructured electrocatalysts as a design platform for decentralized ammonia synthesis and carbon dioxide fixation in artificial leaves, ETH Zurich

2019 – 2020 ENERGY-X, Horizon 2020, European Union

2018 – 2021 Catalyst design for the reforming of halomethanes in natural gas upgrading, ETH Zurich

2017 – 2020 Design of acetylene hydrochlorination catalysts for sustainable PVC production, ETH Zurich

2017 – 2020 An artificial leaf: a photo-electro-catalytic cell, European Research Council

2017 – 2018 Heterogeneous single-atom catalysts for Suzuki coupling, Idorsia, Switzerland

2016 – 2019 Doing more with less: efficient single-atom catalysts based on carbon nitride for sustainable chemical transformations, Swiss National Science Foundation

2016 – 2020 Insight into In_2O_3-based catalysts for methanol synthesis, TOTAL Raffinage Chimie, Belgium

2016 – 2019 Novel zeolite catalysts for continuous selective acylation reactions and design of continuous heterogeneously-catalyzed process for acylation reactions in vitamin synthesis for vitamins A and E, DSM Nutritional Products AG, Switzerland

2016 – 2019 Gas to value: halogen-mediated catalytic processes for natural gas conversion to chemicals, ETH Zurich

2015 – 2019 Heavy alcohols synthesis, TOTAL Raffinage Chimie, Belgium

2015 – 2020 Heterogeneous catalysts for urethane synthesis via amines and dialkyl carbonates, Covestro AG, Germany

2015 – 2018 Polymer building blocks from bio-derived feedstocks, Swiss National Science Foundation

2015 – 2016 MDA synthesis over ASA catalysts, Covestro AG, Germany

2015 – 2016 Advanced catalyst engineering with positron annihilation spectroscopy, ETH Zurich

2014 – 2017 Design of oxyhalogenation catalysts for hydrocarbon functionalization, Swiss National Science Foundation

2014 – 2016 Methanol synthesis, TOTAL Raffinage Chimie, Belgium

2014 – 2016 Styrene production over zeolite-based catalysts, thyssenkrupp Industrial Solutions, Germany

2014 – 2016 Swiss Competence Center for Energy Research, Biomass for Swiss Energy Future, Commission for Technology and Innovation, Switzerland

2014 – 2017 Design of electrocatalysts for the conversion of CO_2 into valuable chemicals, ETH Zurich

2013 – 2017 Cascade deoxygenation process using tailored nanocatalysts for the production of biofuels from lignocellullosic biomass, Seventh Framework Programme, European Union

2012 – 2015 Enabling new sustainable applications of zeolite catalysts through hierarchical structuring, ETH Zurich

2012 – 2014 CO_2-based products – From dream to reality, EIT Climate-KIC, European Union

2012 – 2014 Biomass to chemicals over tailored hierarchical zeolite-based catalysts, Swiss National Science Foundation

2011 – 2014 A fundamental approach to the scale up of hierarchical zeolite catalysts, Swiss National Science Foundation

2011 – 2012 Mesoporous ZSM-5 zeolites, Zeochem, Switzerland

2011 – 2012 The catalytic conversion of methanol to olefins over desilicated ZSM-5 zeolites, BASF, Germany

2010 – 2013 Chemicals on methanol synthesis, TOTAL Energy Development, France

2007 – 2009	Rational design of efficient catalytic processes through an improved mechanistic understanding. Development and application of time-resolved transient methodologies, Spanish Ministry for Education and Science
2006 – 2013	Catalyst design for sustainable chemistry: an integrated approach, Consolider Ingenio, Spanish Ministry for Education and Science, Germany
2006 – 2009	Modeling of catalytic oxidation of ammonia in a gauze reactor, Yara International, Norway
2006	Gold catalysts for acetylene semi-hydrogenation, BASF, Germany
2005 – 2007	Modeling of catalytic oxidation of ammonia in a gauze reactor, Yara International, Norway
2005 – 2007	Towards optimized chemical processes and new materials by combinatorial science, Sixth framework programme, European Union

Selected Lectures

Plenary Lectures

Frontiers in catalysis engineering for sustainable technologies, 4th EuCheMS Conference on Green and Sustainable Chemistry, Tarragona, Spain, 24th September **2019**

Catalysis engineering for sustainable technologies, 20th Brazilian Catalysis Conference, São Paulo, Brazil, 4th September **2019**

Frontiers in catalysis engineering for sustainable technologies, 26th North American Catalysis Society, Chicago, US, 25th June **2019**

Catalysis engineering for sustainable technologies, 2nd Trans-Pyrenean Meeting in Catalysis, Tarragona, Spain, 19th October **2018**

Design of heterogeneous catalysts for sustainable technologies, 4th International Symposium on the Catalysis for Clean Energy and Sustainable Chemistry, Bilbao, Spain, 9th July **2018**

Zeolites as enablers for sustainable technologies, 19th Chinese Zeolite Conference, Wuhan, China, 25th October **2017**

Discovery and design of catalysts for sustainable technologies, 1st European Conference on Plasma Catalysis for CO_2 Valorization and Green Chemistry, Paris, France, 6th September **2017**

Discovery and design of catalysts for sustainable technologies, 49. Polish Annual Conference on Catalysis, Cracow, Poland, 17th March **2017**

Towards the design of heterogeneous catalysts for sustainable technologies, XVIII Porotec Workshop, Bad Soden, Germany, 8th November **2016**

Towards the design of heterogeneous catalysts for sustainable technologies, Innovative Catalytic Technologies in Chemistry, Petrochemistry and Oil Refining, Saint Petersburg, Russia, 21st October **2016**

Halogen chemistry on catalytic surfaces, X International Conference Mechanisms of Catalytic Reactions, Svetlogorsk, Russia, 3rd October **2016**

Quality of pore networks in hierarchical zeolites, 2nd Workshop: Hierarchically-ordered Materials: From Theory to Applications, Erlangen, Germany, 28th September **2016**

Halogen chemistry on ceria and related materials, Symposium on Fundamentals and Applications of Cerium Oxide in Catalysis, Beijing, 2nd July **2016**

Towards the design of heterogeneous catalysts for sustainable technologies, 4th Indo French Symposium, Villeneuve d'Ascq, France, 27th June **2016**

Catalyst and process design for glycerol valorization to commodities, Catalysis applied to biomass – toward sustainable processes and chemicals, Compiègne, France, 9th March **2016**

Design of hierarchically organized zeolite catalysts, 6th International Symposium Advanced Micro- and Mesoporous Materials, Burgas, Bulgaria, 7th September **2015**

Design of hierarchically organized zeolite catalysts, Massachusetts Institute of Technology, Cambridge MA, US, 27th August **2015**

Expanding the horizons of ceria in oxidation and hydrogenation catalysis, Workshop of CeO_2-based Materials in Catalysis and Electrochemistry, Rauischholzhausen, 27th July **2015**

Are we able to design heterogeneous catalysts?, SECAT'15, Barcelona, Spain, 15th July **2015**

Design of hierarchically organized zeolite catalysts, Southeast Asia Catalysis Conference, Singapore, 15th May **2015**

Glycerol to commodities via chemocatalytic routes, International Symposium on Green Chemistry, La Rochelle, France, 5th May **2015**

Design of hierarchical zeolite catalysts – Where pore and active site quality meet, 6th EAM Symposium, Kloster Banz, Bad Staffelstein, Germany, 25th November **2014**

New catalytic processes for halogen recycling, NIOK/KNAW symposium – Catalysis for the future, 12th November **2014**

Design of hierarchical zeolite catalysts: where pore and active site quality meet, 6th FEZA conference, Leipzig, Germany, 11th September **2014**

Design of hierarchical zeolite catalysts, FEZA pre-school, FEZA-Pre-School: Hierarchically-ordered Materials: From Theory to Applications, Lichtenfels, Germany, 7th September **2014**

Revitalizing the chemical industry by catalyst design, 1st Centennial Shell Catalysis Conference, Amsterdam, the Netherlands, 22nd May **2014**

Design of hierarchical zeolite catalysts – Where pore and active site quality meet, 37th Meeting of the British Zeolite Association, Glasgow, UK, 11th April **2014**

New catalytic processes for halogen recycling, NCCC XV – The Netherlands' Catalysis and Chemistry Conference, Noordwijkerhout, the Netherlands, 11th March **2014**

Catalytic processes for halogen recycling, Slonano, Ljubljana, Slovenia, 23rd October **2013**

Deacon chemistry revisited – New catalytic processes for chlorine recycling, Frontiers in chemical reaction engineering, Ghent, Belgium, 25th June **2013**

Deacon chemistry revisited: new catalytic processes for chlorine recycling, 46. Jahrestreffen Deutscher Katalytiker, Weimar, Germany, 13th March **2013**

Engineering of hierarchical zeolite catalysts, Jahrestreffen Reaktionstechnik, Würzburg, Germany, 16th May **2012**

Hierarchical zeolites by demetallation, School of Molecular Sieves, Prague, Czech Republic, 2nd April **2012**

Design of hierarchical zeolite catalysts, Royal Society of Chemistry SURCAT meeting, London, UK, 9th December **2011**

Scale up of hierarchical porous zeolites – Science fiction or science reality?, 23. Deutsche Zeolithe Tagung, Erlangen, Germany, 4th March **2011**

Engineering of hierarchical zeolite catalysts, 23rd Entretiens Jacques Cartier, Lyon, France, 22nd November **2010**

Chlorine recycling via catalyzed HCl oxidation: from fundamentals to implementation, Frontiers in Heterogeneous Catalysis, Garching, Germany, 23rd October **2010**

Demand more on your catalyst – Design of hierarchical zeolites, IDECAT conference on catalysis, Porquerolles, France, 22nd May **2009**

Demand more on your catalyst – Design of hierarchical zeolites, French Group of Zeolites, Port-Bail, France, 1st April **2009**

Keynote Lectures

Frontiers in Catalyst Design for Sustainable Technologies, Workshop: SHINE - Sunshine into New Energy, National University of Singapore, 2nd August **2019**

Analysis of pore quality in hierarchical zeolite catalysts, 19th International Zeolite Conference, Perth, Australia, 9th July **1019**

Halogen-mediated catalytic processes for natural gas upgrading, 12th Natural Gas Conversion Symposium, San Antonio, US, 4th June **2019**

Catalysis engineering for sustainable technologies, 14. Freiburger Symposium Industrial and Applied Chemistry, School of Engineering & Architecture of Fribourg, Switzerland, 17th May **2019**

Catalysis engineering for sustainable technologies, Annual meeting of the Sustainable Chemistry division of the German Chemical Society, RWTH Aachen, Germany, 18th September **2018**

Catalysis engineering for sustainable technologies, Sunshine in a barrel – next generation green energy, National University of Singapore, 26th March **2018**

Towards catalyst design for CO_2 valorization, Nature Conference on Materials Electrochemistry: Fundamentals and Applications, Shenzhen, China, 13th January **2018**

Catalytic technologies towards the glycerol biorefinery, 46th World Chemistry Congress, São Paolo, Brazil, 11th July **2017**

Design of stable single-atom catalysts based on graphitic carbon nitride, International Symposium on Single-Atom Catalysis, Dalian, China, 1st July **2016**

Hybrid nanostructured catalysts for selective hydrogenation, Third International Conference on Advanced Complex Inorganic Nanomaterials, Namur, Belgium, 13th July **2015**

New applications of CeO_2 in oxidation and hydrogenation catalysis, Fundamentals and Applications of Ceria in Catalysis, Udine, Italy, 13th July **2014**

Design of hierarchical zeolite catalysts, Tailor-Made Fuels from Biomass, Aachen, Germany, 16th June **2014**

Catalytic processes for halogen recycling, TOCAT7, Kyoto, Japan, 5th June **2014**

Sustainable chlorine recycling via HCl oxidation, 8th European Congress on Chemical Engineering, Berlin, Germany, 28th September **2011**

Control of N_2O emissions in industry – Catalysts and processes, 2nd International Symposium on Air Pollution Abatement Catalysis, Cracow, Poland, 9th September **2010**

Control of N_2O in industry – Overview of present technologies and challenges ahead, Fifth International Symposium on Non-CO_2 Greenhouse Gases, NCGG5, Wageningen, the Netherlands, 30th June **2009**

Hierarchical zeolites – The engineering starts in the pore, Europacat VIII, Turku, Finland, 30th August **2007**

New catalytic processes for chlorine recovery – From fundamentals to implementation, Europacat X, Glasgow, UK, 30th August **2011**

Perovskites membranes in ammonia oxidation – Opportunities for pocket-sized nitric acid plants, 2nd International Conference on Structured Catalysts and Reactors, Delft, the Netherlands, 2nd October **2005**

Control of N_2O emissions in the chemical industry, ourth International Symposium on Non-CO_2 Greenhouse Gases, NCGG4, Utrecht, the Netherlands, 5th July **2005**

N_2O abatement – Low vs high temperature catalysis, 4th International Conference on Environmental Catalysis, Heidelberg, Germany, 8th June **2005**

Invited Lectures

Frontiers in catalyst design for sustainable technologies, Nanyang Technological University, Singapore, 13th February **2020**

Frontiers in catalyst design for sustainable technologies, Delft University of Technology, Netherlands, 8th January **2020**

Frontiers in catalyst design for sustainable technologies, Casale, Lugano, Switzerland, 6th December **2019**

Frontiers in catalyst design for sustainable technologies, College of Chemistry, Trinity College Dublin, Ireland, 28th November **2019**

Frontiers in catalysis engineering for sustainable technologies, Cell Symposia: Next-Generation Materials for Energy Applications, Xiamen, China, 19th November **2019**

Frontiers in catalysis design for sustainable technologies, Nature Research Round Table, Energy Materials for Sustainability: Bridging Academia and Industry, Beijing, China, 8th November **2019**

Frontiers in catalysis design for sustainable technologies, Beijing Institute of Technology, China, 7th November **2019**

Overview of the Energy-X project, Sunrise Swiss Stakeholder Workshop, Dübendorf, Switzerland, 27th September **2019**

Catalysis engineering for sustainable technologies, XXXVII Biennial Meeting of the Spanish Royal Society of Chemistry, San Sebastian, Spain, 28th May **2019**

Catalysis engineering for sustainable technologies, Seminar at the Center for Natural Sciences, Hungarian Academy of Sciences, Budapest, Hungary, 18th January **2019**

Transformative chemistry for a sustainable future, Seminar at the Universitat Rovira i Virgili, Tarragona, Spain, 11th January **2019**

Catalysis engineering for sustainable technologies, Seminar at the Bernese Chemical Society, University of Bern, Switzerland, 5th December **2018**

Catalysis engineering for sustainable technologies, Seminar at the Munich Chemical Society, Technical University of Munich, Germany, 13th November **2018**

Catalysis engineering for sustainable technologies, International Symposium on Catalysis Engineering, Delft University of Technology, the Netherlands, 27th September **2018**

Catalysis engineering for sustainable technologies, Syngenta Chemistry Lecture 2018, Stein, Switzerland, 13th September **2018**

Transformative chemistry for the energy grand challenge, Workshop 'Tackling the CO_2 challenge', National University of Singapore, 10th September **2018**

Catalysis engineering for sustainable technologies, Event 'Mitigating issues of future wastes: enhancing resource productivity in emerging technologies', Royal Society of Chemistry, Burlington House, London, 5th September, **2018**

Summer School 'Power to X: Fundamentals and Applications of Modern Electrosynthesis', Villars-sur-Ollon, Switzerland, 28th August **2018**

Catalysis engineering for sustainable technologies, Summer School 'Power to X: Fundamentals and Applications of Modern Electrosynthesis', Villars-sur-Ollon, Switzerland, 28th August **2018**

Catalysis engineering for sustainable technologies, Zhang Dayu Lectureship, Dalian Institute of Chemical Physics, China, 23rd August **2018**

Zeolites as enablers for sustainable technologies, EFCATS School on Catalysis, Liblice, Czech Republic, 26th June 2018

Catalysis engineering for sustainable technologies, Xing Da Lectureship, Peking University, China, 8th June **2018**

Propelling sustainable chemistry with catalysis, Tsinghua University, China, 6th June **2018**

Catalysis engineering for sustainable technologies, University of Fribourg, Switzerland, 11th April **2018**

Catalysis engineering for sustainable technologies, University of Oxford, UK, 12th March **2018**

Design of heterogeneous catalysts for sustainable technologies, Aston University, UK, 8th March **2018**

Propelling sustainable chemistry with catalysis, University of Aberdeen, UK, 7th March **2018**

Discovery and design of catalysts for sustainable technologies, Micromeritics Instruments, Norcross GA, 13th December **2017**

Discovery and design of catalysts for sustainable technologies, École Polytechnique Fédérale de Lausanne, Switzerland, 1st December **2017**

Discovery and design of catalysts for sustainable technologies, SUNCAT Summer Institute, Stanford University, Palo Alto CA, US, 14th August **2017**

Catalysis engineering for sustainable technologies, Micromeritics workshop on materials characterization, Hermsdorf, Germany, 26th April **2017**

Catalysis engineering for sustainable technologies, Firmenich, Geneva, Switzerland, 7th April **2017**

Discovery and design of catalysts for sustainable technologies, University of Udine, Italy, 27th March **2017**

Catalyst design and discovery for sustainable technologies, University of Ljubljana, Slovenia, 18th January **2017**

Catalyst design and discovery for sustainable technologies, University of Cambridge, UK, 2nd February **2017**

Design and discovery of heterogeneous catalysts for sustainable technologies, University of Cordoba, Spain, 22nd November **2016**

Towards the design of heterogeneous catalysts for sustainable technologies, TOTAL Research & Technology Center Feluy, Seneffe, Belgium, 4th November **2016**

Chemical innovation through catalysis engineering, Industry Day, ETH Zurich, 22nd September **2016**

Halogen chemistry on catalytic surfaces, thyssenkrupp Industrial Solutions, Dortmund, Germany 8th September **2016**

Catalyst design for bio-oil deoxygenation, CASCATBEL Workshop on Thermochemical Lignocellulose Conversion Technologies, Porto Carras, Chalkidiki, Greece, 18th May **2016**

Bringing catalysts to technical scale – New processes in polymer manufacture, SECAT Summer School, Barcelona, Spain, 16th July **2015**

Towards the design of heterogeneous catalysts for sustainable technologies, King Abdullah University of Science & Technology, Thuwal, Saudi Arabia, 20th June **2016**

Towards the design of heterogeneous catalysts for sustainable technologies, University College London, UK, 8th June **2016**

Towards the design of heterogeneous catalysts for sustainable technologies, EPFL Valais Wallis, Sion, Switzerland, 12th May **2016**

A glimpse into catalyst design, Micromeritics Instruments, Norcross GA, US, 18th January **2016**

Are we able to design heterogeneous catalysts?, National Institute of Chemistry, Ljubljana, Slovenia, 21st October **2015**

Are we able to design heterogeneous catalysts?, DSM Nutritional Products, Kaiseraugst, Switzerland, 20th October **2015**

Design of hierarchically organized zeolite catalysts, Instituto de Ciencia de Materiales, Seville, Spain, 11th November **2015**

Design of hierarchically organized zeolite catalysts, Micromeritics Day, CSIC, Madrid, Spain, 25th June **2015**

Catalyst innovation in polyurethane manufacture, Karlsruhe Institute of Technology, Germany, 7th April **2015**

Catalyst innovation in polyurethane manufacture, Beilby Lecture, Society of Chemical Industry, London, UK, 17th March **2015**

New processes for glycerol valorization to commodities, SuBiCat II Symposium, University of St Andrews, UK, 2nd March **2015**

Design of hierarchical zeolite catalysts – Where pore and active site quality meet, University of Bremen, Germany, 5th January **2015**

Design of hierarchical zeolite catalysts – Where pore and active site quality meet, Max Planck Institute of Colloids and Interfaces, Potsdam, Germany, 8th October **2014**

Collaborate with the right partner: my experience with Micromeritics, Micromeritics Instruments, Norcross GA, US, 26th October **2014**

Design of catalytic materials, Albemarle, Amsterdam, the Netherlands, 22nd September **2014**

Bringing catalysts to technical scale – New processes for chlorine production, 10th Anniversary, Institute of Chemical Research of Catalonia, Tarragona, Spain, 18th July **2014**

Design of hierarchical zeolite catalysts – Where pore and active site quality meet, Synfuels, Beijing, China, 4th July **2014**

Design of hierarchical zeolite catalysts – Where pore and active site quality meet, National Institute of Clean-and-Low Carbon Energy, Beijing, China, 3rd July **2014**

Revitalizing the chemical industry by catalyst design, PetroChina Research Institute, Beijing, 2nd July **2014**

Catalytic processes for halogen recycling, PetroChina Research Institute, Beijing, 2nd July **2014**

Design of hierarchical zeolite catalysts – Where pore and active site quality meet, IFP Energies nouvelles, Solaize, France, 17th April **2014**

Design of hierarchical zeolites: opportunities in base catalysis, thyssenkrupp Industrial Solutions, Dortmund, Germany, 7th February **2014**

New catalytic processes for halogen recycling, Clariant Produkte, Bruckmühl, Germany, 29th January **2014**

Catalytic processes for halogen recycling, General meeting COST Action CM1104, Uppsala, Sweden, 6th November **2013**

Deacon chemistry revisited – New catalytic processes for chlorine recycling, Solvay, Brussels, Belgium, 8th July **2013**

Treasure hunting in catalysis by hierarchical zeolite design, Micromeritics workshop on materials characterization, Frickenhausen, Germany, 17th April **2013**

Treasure hunting in catalysis by hierarchical zeolite design, 16th RTIG Diffusion of porous materials, Delft University of Technology, the Netherlands, 4th April **2013**

Treasure hunting in catalysis by hierarchical zeolite design, Andrew Main lecture, University of Alberta, Canada, 14th February **2013**

Scale up of hierarchical zeolites: science fiction or science reality?, TOTAL Catalysis Club Meeting, La Hulpe, Belgium, 24th January **2013**

New catalytic processes for chlorine production, Delft University of Technology, the Netherlands, 13th November **2012**

Engineering of hierarchical zeolite catalysts, UOP-Honeywell Invitational Lecture Series, Des Plaines IL, US, 10th September **2012**

Design of hierarchical zeolites from lab to plant scale, Advanced Porous Materials workshop, ETH Zurich, Switzerland, 22nd August **2012**

Catalysis engineering: from molecules to products, Zeochem, Uetikon am See, Switzerland, 22nd May **2012**

Design of hierarchical zeolite catalysts – Beyond laboratory potential towards implementation, Bayer MaterialScience, Dormagen, Germany, 26th April **2012**

Design of hierarchical zeolite catalysts – Beyond laboratory potential towards implementation, Karlsruhe Institute of Technology, Germany, 25th April **2012**

Design of hierarchical zeolite catalysts – Beyond laboratory potential towards technical realization, Micromeritics Instruments, Norcross GA, US, 15th January **2012**

Design of hierarchical zeolite catalysts – Science fiction or science reality?, University of Alicante, Spain, 10th October **2011**

Catalysis engineering for sustainable development, Bayer Science and Innovation Dialogue, Leverkusen, Germany, 19th October **2011**

Scale up of hierarchical zeolite catalysts – Science fiction or science reality?, John van Geuns lecture, Amsterdam University, the Netherlands, 13th September **2011**

Design of hierarchical zeolite catalysts, Leipzig University, Germany, 19th May **2011**

Hierarchical zeolites – From lab curiosity to industrial use, RWTH Aachen, Germany, 10th May **2011**

Scale up of hierarchical porous zeolites: science fiction or science reality?, Utrecht University, the Netherlands, 19th April **2011**

Scale up of hierarchical porous zeolites: science fiction or science reality?, J. Heyrovsky Institute of Physical Chemistry, Prague, Czech Republic, 7th April **2011**

Hierarchically structured zeolite catalysts: from lab curiosity to industrial practice, Paul Scherrer Institute, Villingen, Switzerland, 28th January **2011**

The post-synthesis toolbox to design hierarchical zeolite catalysts, NANO-HOST workshop, Montpellier, 5th October **2010**

Demand more on your catalyst – Engineering hierarchical zeolites, BASF, Ludwigshafen, Germany, 19th May **2010**

Demand more on your catalyst – Engineering hierarchical zeolites, École Polytechnique Fédérale de Lausanne, Switzerland, 5th May **2010**

Demand more on your catalyst – Design hierarchical zeolites, Zeochem, Uetikon am See, Switzerland, 25th March **2010**

Demand more on your catalyst – Engineering hierarchical zeolites, Institute of Chemical Research of Catalonia, Tarragona, Spain, 25th September **2009**

Control of N_2O emissions in industry – Catalysts and processes, 6th Tøpsoe Catalysis Forum, Munkerupgaard, Denmark, 28th August **2009**

Demand more on your catalyst – Engineering hierarchical zeolites, ENSICAEN, Caen, France, 3rd May **2009**

Control of N_2O in the chemical industry – From waste to product, ENSICAEN, Caen, France, 12th May **2009**

Enhanced catalyst effectiveness – Design of hierarchical zeolites, CAT Catalytic Center, Bayer Materials Science, Aachen, 29th January **2009**

Catalyst effectiveness – The case of (hierarchical) zeolites, Denmark Technical University, Lyngby, Denmark, 21st January **2009**

Hierarchical zeolites: the engineering starts in the pore, University of Valladolid, Spain, 26th November **2008**

Mesoporous zeolites by desilication – Enhanced utilization of microporous crystals, Denmark Technical University, Lyngby, Denmark, 29th April **2008**

Mesoporous zeolites by desilication, Utrecht University, the Netherlands, 2nd June **2008**

Hierarchical zeolites – Enhanced utilization of microporous crystals, Ruhr University Bochum, Germany, 15th April **2008**

Laughing gas in nitric acid production: not a laughing matter, Ercros, Tarragona, Spain, 17th January **2008**

Summary of options for N_2O mitigation in the chemical industry, DSM, Geleen, the Netherlands, 10th January **2008**

Mesoporous zeolite crystals obtained by desilication, ENSICAEN, Caen, France, 21st November **2007**

Mesoporous zeolites obtained by desilication, UC Berkeley, US, 15th June **2007**

The TAP reactor in catalyst development programs, Engelhard, Iselin NJ, US, 9th February **2006**

Greening up catalytic processes in nitric acid production, Universitat Rovira i Virgili, Tarragona, Spain, 21st January **2005**

Catalysis engineering on three levels, Institute of Chemical Research of Catalonia, Tarragona, Spain, 14th April **2004**

Elucidation of the surprising role of NO on the N_2O conversion over Fe-catalysts, Institute of Applied Chemistry Adlershof, Berlin, Germany, 30th April **2002**

N_2O activation – new catalysts and processes for abatement and utilization, University of Alicante, Spain, 19th December **2002**