

Curriculum Vitae

Prof. Dr. habil Jan-Dierk Grunwaldt

Karlsruhe Institute of Technology (KIT), Institute of Chemical Technology and Polymer Chemistry (ITCP) and Institute for Catalysis Research and Technology (IKFT), 76131 Karlsruhe, Germany

Born 03.09.1968 in Kiel / Germany
Married to Sibylle Vogelsanger Grunwaldt, 2 children



University training and degree

1989-1993 Chemistry, University of Hamburg and the University of Newcastle upon Tyne, GB;
degree: MSc in Chemistry (Diplom-Chemiker)

Advanced academic qualification

2001-2006 Habilitation, Venia legendi in Technical Chemistry, Institute of Chemical and Biochemical Engineering, ETH Zürich, Switzerland
1993-1998 PhD work, Dr. Sci. nat., Laboratory for Technical Chemistry, Department of Chemistry and Applied Biosciences, ETH Zürich, Switzerland

Postgraduate professional career

Since 2010 Full Professor (W3), Chair in Chemical Technology and Catalysis, ITCP (Head of institute 2013-2015, 2017-2020), KIT, since 2011 member of board of directors of IKFT, coordinator of the SPP2080 since 2018, speaker of SFB 1441 "TrackAct" since 2021
2008-2010 Full Professor, Haldor Topsøe Chair in Catalysis and Chemical Engineering, Department of Chemical and Biochemical Engineering, DTU, Kgs. Lyngby, DK
2006-2008 Privatdozent, Institute of Chemical and Biochemical Engineering, ETH Zürich, CH.
2001-2006 Senior Scientist and Lecturer, Institute of Chemical and Biochemical Engineering, ETH Zürich, CH
1998-2001 Project Manager at the catalyst and engineering company Haldor Topsøe A/S, DK

Others – Honors and awards

2020 Coordinator of the collaboration research centre SFB1441 Trackact (www.trackact.kit.edu)
2018 Coordinator of the DFG priority program SPP2080 Dynacat (www.spp2080.org)
2010 Announced as adj. Professor at the Technical University of Denmark (DTU Chemical Engineering, renewed 2015 and 2020)
2007 Karl-Winnacker-Stipendiat, Aventis Foundation, Frankfurt a. Main, Germany
2006 Dale Sayers Award of the International XAFS Society (IXS), 13th International EXAFS Conference, Stanford, USA
2006 Jochen-Block-Award, Catalyst Section of DECHEMA, Weimar, Germany
2004 Young Scientist Award at the 13. International Catalysis Conference, Paris, France
1994-1996 Kékulé scholarship, awarded by "Fonds der Chemischen Industrie"
1994 Award for the best diploma student at the University of Hamburg in 1993/94, honoured by the "Gesellschaft Deutscher Chemiker", Germany
1989-1993 Fellowship of the "Studienstiftung des Deutschen Volkes"

Selected positions and memberships in committees

Since 2020 Chair of the German Committee "Research with Synchrotron Radiation" (since 2011 member, 2017 - 2020 vice chair)
Since 2019 Member of the Lenkungskreis of GeCATs and German Delegate for EFCATS (European Catalysis Society) and ICC (International Catalysis Society)

2017-2019 Member of the Division 1 Council "Biology, Chemistry, and Process Engineering" at KIT
2015 Organization of International EXAFS Conference "XAFS16" in Germany, chairman, ca. 600 participants
2014-2019 Member of „Kommission der Deutschen Gesellschaft für Katalyse“ (GeCatS)
2012-2018 Elected Member of the International X-ray Absorption Spectroscopy Society
Since 2010 Adj. Professor at the Technical University of Denmark (DTU), Kgs. Lyngby, DK
2009-2010 President of the Nordic Catalysis Society and Danish Delegate for EFCATS
1992-1997 President of the Association for the Promotion of the Chemistry Olympiad in Germany
Member of DECHEMA/ProcessNet, GDCh, ACS, Deutsche Bunsengesellschaft, DPG, Neue Schweizerische Chemische Gesellschaft, Danish Engineering Society IDA, Förderverein Chemie-Olympiade e.V., Heinrich-Hertz-Association, FCTKA, KFS

Selected publications (h-index of 67, 387 publications, 15,000 citations, according to Scopus, 18.09.2021)

a.) Peer-reviewed Publications

- (1) . Escalera-López, S. Czioska, J. Geppert, A. Boubnov, P. Röse, E. Saraçi, U. Krewer, J.-D. Grunwaldt, S. Cherevko, [Phase and surface composition-dependent electrochemical stability of Ir-Ru nanoparticles during oxygen evolution reaction](#), ACS Catal., in press, doi: 10.1021/acscatal.1c01682 (2021).
- (2) J. Becher, D.F. Sanchez, D.E. Doronkin, D. Zengel, D.M. Meira, S. Pascarelli, J.D. Grunwaldt, T.L. Sheppard, [Chemical gradients in automotive Cu-SSZ-13 catalysts for NOx removal revealed by operando X-ray spectromotography](#), Nature Catalysis **2021**, 4, 46.
- (3) M.-A. Serrer, A. Gaur, J. Jelic, S. Weber, C. Fritsch, A. H. Clark, E. Saraçi, F. Studt, J.-D. Grunwaldt, [Structural dynamics in Ni-Fe catalysts during CO₂ methanation – role of iron oxide clusters](#), Catal. Sci. Technol. **2020**, 10, 7542.
- (4) F. Maurer, J. Jelic, J.J. Wang, A. Ganzler, P. Dolcet, C. Woll, Y.M. Wang, F. Studt, M. Casapu, J.-D. Grunwaldt, [Tracking the formation, fate and consequence for catalytic activity of Pt single sites on CeO₂](#), Nature Catalysis **2020**, 3, 824-833.
- (5) M. Loewert, M.A. Serrer, T. Carambia, M. Stehle, A. Zimina, K.F. Kalz, H. Lichtenberg, E. Saraci, P. Pfeifer, J.-D. Grunwaldt, [Bridging the gap between industry and synchrotron: an operando study at 30 bar over 300 h during Fischer-Tropsch synthesis](#), React. Chem. Eng. **2020**, 5, 1071.
- (6) K. F. Kalz, R. Kraehnert, M. Dvoyashkin, R. Dittmeyer, R. Gläser, U. Krewer, K. Reuter, J.-D. Grunwaldt, [Future Challenges in Heterogeneous Catalysis: Understanding Catalysts under Dynamic Reaction Conditions](#). *ChemCatChem* **2017**, 9, 17.
- (7) B. Mutz, H. W. P. Carvalho, S. Mangold, W. Kleist, J.-D. Grunwaldt, [Methanation of CO₂: Structural response of a Ni-based catalyst under fluctuating reaction conditions unraveled by operando spectroscopy](#). *J. Catal.* **2015**, 327, 48.
- (8) K. Schuh, W. Kleist, M. Høj, V. Trouillet, A. D. Jensen, J.-D. Grunwaldt, [One-step synthesis of bismuth molybdate catalysts via flame spray pyrolysis for the selective oxidation of propylene to acrolein](#). *Chem. Comm.* **2014**, 50, 15404.
- (9) A. Boubnov, H. W. P. Carvalho, D. E. Doronkin, T. Günter, E. Gallo, A. J. Atkins, C. R. Jacob, J.-D. Grunwaldt, [Selective catalytic reduction of NO over Fe-ZSM-5: Mechanistic insights by operando HERFD-XANES and valence-to-core XES](#). *J. Am. Chem. Soc.* **2014**, 136, 13006.
- (10) J.-D. Grunwaldt, [In situ Analysis of Heterogeneous Catalysts in Chemical Energy Conversion](#). in: R. Schlögl (Ed.) Chemical Energy Storage, Walter de Gruyter GmbH, Berlin/Boston, ISBN: 978-3-11-026632-0, **2012**, 311, presently an updated chapter is prepared (2021).

b.) Patents

- (1) P. Sprenger, J.-D. Grunwaldt, W. Kleist, A. Fischer, [Method for the hydrothermal preparation of Molybdenum-Bismuth-Cobalt-Iron-based mixed oxide catalysts](#), US20190076829, WO2017157837 (patent application)
- (2) M. Wittrock, U. Göbel, T. Kreuzer, M. Casapu, J.-D. Grunwaldt, M. Maciejewski, A. Baiker, [Verfahren zur Reaktivierung thermisch gealterter Stickoxid-Speicherkatalysatoren](#). WO 2007/009679A2, **2007**.
- (3) J.-D. Grunwaldt, H. Teunissen, [Process for the catalytic oxidation of carbon monoxide and/or methanol](#). Haldor Topsoe A/S, EP1209121, **2002**; US6692713, **2002**.