



Curriculum Vitae Prof. Dr. Robert Schlögl



Image: Markus Scholz for the Leopoldina

Name: Robert Schlögl
Born: 23 February 1954

Research Priorities: heterogeneous catalysis, nanochemically optimized materials for energy storage concepts, chemical energy conversion, energy conversion processes in nature

Robert Schlögl is a chemist and catalysis researcher. His research focuses on heterogeneous catalysis and materials for energy storage concepts. With his work, he has contributed to a new understanding of catalytically active materials. More recently, he has been working on energy systems of the future and the complex challenges of the energy revolution.

Academic and Professional Career

- since 2023 President of the Alexander von Humboldt Foundation, Bonn, Germany
- since 2015 Honorary Professor at the Ruhr University Bochum, Germany
- since 2013 Honorary Professor at the University of Duisburg-Essen, Germany
- 2011 - 2022 Founding Director and Managing Director at the Max Planck Institute for Chemical Energy Conversion (MPI CEC), Mülheim an der Ruhr, Germany
- 2005 Fellow of the Royal Society of Chemistry, Cambridge, UK
- 2004 Tetelman Fellow, Yale University, USA
- 2001 Visiting Professorship at the Laboratoire des Matériaux, Surfaces et Procédés pour la Catalyse (L.M.S.P.C.), Université Louis Pasteur, Strasbourg, France
- since 1998 Honorary Professor at the Humboldt University Berlin, Germany
- since 1994 Honorary Professor at the Technical University Berlin, Germany
- 1994 - 2023 Director at the Fritz Haber Institute of the Max Planck Society, Berlin, Germany

1989 - 1994	C4 Professorship for inorganic chemistry at the University of Frankfurt/Main, Germany
1989	Habilitation at the Fritz Haber Institute of the Max Planck Society, Berlin, Germany
1984 - 1985	Postdoc at the Institute of Physics, Basel, Switzerland
1982 - 1983	Postdoc at the Institute of Physical Chemistry, Cambridge University, UK
1982	Doctorate at the Ludwig-Maximilians-University Munich, Germany
1979	Diploma in chemistry
1973 - 1978	Study of chemistry at the Ludwig-Maximilians-University Munich, Germany

Functions in Scientific Societies and Committees

since 2020	Vice President of the German National Academy of Sciences Leopoldina
since 2020	Vice Chairman of the National Hydrogen Council, Germany
since 2018	Member of the Board of Trustees of the academy project “Energy Systems of the Future” (ESYS), supported by acatech – National Academy of Science and Engineering, the German National Academy of Sciences Leopoldina and the Union of the German Academies of Sciences and Humanities
since 2017	Co-Chair of the Carbon capture and utilisation (CCU) Working Group, Science Advice for Policy by European Academies (SAPEA)
2017	Member of the Supervisory Board of the Helmholtz-Zentrum Berlin für Materialien und Energie, Germany
since 2016	Chairman of the Advisory Board “Kopernikusprojekte” of the Federal Ministry of Education and Research Germany (BMBF)
since 2015	Member of the BMBF Hightech-Forum, Germany
2013 - 2017	Chairman of the Steering Committee of the academy project “Energy Systems of the Future” (ESYS), supported by acatech – National Academy of Science and Engineering, the German National Academy of Sciences Leopoldina and the Union of the German Academies of Sciences and Humanities
2012 - 2017	Head of Steering Committee of “Energy Systems for the Future”, the academic advisory board to the German government
since 2010	Chair of the MPG Presidential Commission on Future Directions of Science, Germany
since 2010	Topical Network Leadership “Energy and Resources”, acatech – National Academy of Science and Engineering, Germany

- 2010 - 2014 Member of the Scientific Advisory Board Leibnitz Institute for Catalysis, Rostock, Germany
- since 2009 Member of the Editorial Board ChemCatChem
- since 2009 Member of the Advisory Board ChemSusChem
- 2008 - 2012 Member of the Advisory Board "Archiv zur Geschichte der Max-Planck-Gesellschaft", Germany
- 2007 - 2010 Chairman of Panel 4 "Chemistry and Materials Sciences" of the European Research Council (ERC)
- 2004 - 2006 Chairman of the Chemical Physical Technical (CPT) Section of the Max Planck Society, Germany
- 2003 - 2009 Member of the Editorial Board Catalysis Letters
- 2003 - 2009 Member of the Editorial Board Journal of Catalysis
- 1999 - 2005 Head of the Scientific Information Committee of the Max Planck Society, Germany
- 1999 - 2004 Chairman of the Awards Committee of the Berlin-Brandenburg Academy of Sciences and Humanities, Germany
- 1999 - 2003 Member of the Editorial Board of Physical Chemistry – Chemical Physics (PCCP)
- 1998 - 2002 Member of the Editorial Board of Applied Catalysis A
- 1996 - 2003 President of the German Catalysis Society (GECATS)
- 1996 - 2002 Head of the Catalysis Section of the Society for Chemical Engineering and Biotechnology (DECHEMA)
- 1995 - 2001 Member of the Advisory Board, Hahn Meitner Institute (HMI), Berlin, Germany
- Member of the Advisory Board of the German Catalysis Society (GEATS)
- Member of the Advisory Board of the European Federation of Catalysis Societies (EFCATS)
- Member of the Scientific Advisory Board of the Berliner Elektronenspeicherring-Gesellschaft für Synchrotronstrahlung m.b.H. (BESSY)
- Member of the Advisory Board of the International Association of Catalysis Societies (IACS)

Project Coordination, Membership in Collaborative Projects

- since 2019 Participant in the DFG Cluster of Excellence EXC 2008: Unifying Systems in Catalysis „UniSysCat“
- since 2019 Participant in the DFG Cluster of Excellence EXC 2089: e-conversion

- since 2019 Participant in the DFG Cluster of Excellence EXC 2186: The Fuel Science Center – Adaptive Conversion Systems for Renewable Energy and Carbon Sources
- since 2018 DFG project “Transient High-Temperature Oxygen Evolution Reaction”, Subproject of SPP 2080: “Catalysts and reactors under dynamic conditions for energy storage and conversion”
- since 2018 DFG project “Advanced TEM and in situ X-Ray Spectroscopy (B07)”, Subproject of TRR 247: “Heterogeneous Oxidation Catalysis in the Liquid Phase – Mechanisms and Materials in Thermal, Electro-, and Photocatalysis”
- 2007 - 2018 Participant in the Cluster of Excellence EXC 314: „Unifying Concepts in Catalysis“
- 2007 - 2010 DFG project “Raman-Spektroskopie als diagnostisches Tool zur Bestimmung der Struktur-Reaktivitäts-Korrelation von Ruß unterschiedlicher Mikrostruktur”
- 2003 - 2008 DFG project “Mikroskopische Strukturbildung von Katalysatoroberflächen unter Realbedingungen“, Subproject of SPP 1091: “Bridging the Gap between Ideal and Real Systems in Heterogeneous Catalysis“
- 2002 - 2008 DFG project “New tailored carbon nanofilaments for catalytic applications”
- 2001 - 2010 DFG Project “Oxidnitride des Zirconiums als Materialien und Modellverbindungen für die katalytische Aktivierung von Ammoniak”
- 2001 - 2006 DFG project “Nitridoxide und Nitridverbindungen als Materialien und Modellverbindungen für die katalytische Aktivierung von Stickstoff”
- 2000 - 2008 DFG project “Charakterisierung und Modifikation der aktiven Zentren für die heterogen katalysierte Partialoxidation von Methanol über Kupfer“, Subproject of SPP 1091: “Bridging the Gap between Ideal and Real Systems in Heterogeneous Catalysis“
- 2000 - 2005 DFG project “Von Einkristallsystemen zu realen Katalysatoren am Beispiel der Hydrierung an Silber-Katalysatoren“, Subproject of SPP 1091: “Bridging the Gap between Ideal and Real Systems in Heterogeneous Catalysis“
- 1999 - 2011 DFG project “Partialoxidation kleiner Kohlenwasserstoffmoleküle mit mikroskopischen Mengen von $VxOy$ Katalysatorsystemen“, Subprojects of SFB 546: “Structure, Dynamics and Reactivity of Aggregates of Transition Metal Oxides“

Involved in several EU projects, including CANAPE, ELCAT, TECHNO TUBES, GRAFOL

Cooperation with Boreskov Institute of Catalysis, Novosibirsk, Russia; EPFL, Switzerland; Cardiff University, U.K.; University of Messina, Catania, Italy; MIT, Boston, USA; University of Virginia, Charlottesville, USA; University of California, Berkeley, USA and others.

Participant of the European Network IDECAT "Catalysis for Sustainable Energy Production

Max Planck project ENERCHEM “Energy from renewable resources – an interdisciplinary approach by Chemists and Material Scientists to tackle questions of social relevance”

Co-initiator of the DFG priority program for catalysis research

Co-initiator of the DFG Excellence Cluster Catalysis Research

Honours and Awarded Memberships

2020	Honorary Doctorate, University Darmstadt, Germany
2019	Ipatieff Lecture, Center for Catalysis and Surface Science (CCSS), USA
2019	Cultural Award, Eduard Rhein Foundation
since 2018	Honorary Professor, Boreskov Institute of Catalysis, Russia
since 2017	Distinguished Affiliated Professor, Technical University of Munich, Germany
2017	Ruhr Prize for Art and Science of the City of Mülheim a. d. Ruhr, Germany
2017	ENI Award Energy Transition
2016	Innovation Award, State of North Rhine-Westphalia, Germany
2015	Alwin Mittasch Prize, German Catalysis Society (GEATS)
2013	Max Planck Communitas Award
since 2011	Member of the German National Academy of Sciences Leopoldina
2010	DECHEMA Plaque in Titanium
since 2005	Fellow of the Royal Society of Chemistry, UK
since 1995	Member of the Berlin-Brandenburg Academy of Sciences and Humanities, Germany
1994	Otto Bayer Award, Bayer Science & Education Foundation
1989	Schunck Award for Innovative Materials

Member of acatech – National Academy of Science and Engineering, Germany

Research Priorities

Robert Schlögl is a chemist and catalysis researcher. His research focuses on heterogeneous catalysis and materials for energy storage concepts. With his work, he has contributed to a new understanding of catalytically active materials. More recently, he has been working on energy systems of the future and the complex challenges of the energy revolution.

Robert Schlögl and his team are researching energy conversion processes in nature and the significance of catalysts within these processes. This concerns questions of the production,

storage, and transport of energy. In nature, energy is stored through photosynthesis. During this process, carbon dioxide and water are converted into organic molecules such as sugar and oxygen. However, photosynthesis cannot be replicated using synthetic chemistry; the molecules involved are too sensitive.

Therefore, the scientists, led by Robert Schlögl, seek to understand the basic chemical reactions of these processes in order to use them for new energy systems. In individual research projects, they are working, for example, on the conversion of light into electrical energy, storage materials for hydrogen, the catalytic splitting of water, and further development of fuel cells.

Catalysts play a significant role in all these processes. Without catalysts, for example, the storage of solar energy is not possible. His research aims to develop new, powerful catalysts while emphasizing the sustainability of the processes. Substances used as catalysts must be available and accessible on earth in sufficient quantities. He has also developed a process that could significantly reduce the chemical industry's energy consumption by using carbon nanomaterials. The chemical base material styrene can thus be produced in a more energy-efficient way than before.

In his research, Schlögl works on an interdisciplinary basis and combines scientific model studies with the high-performance systems of technical catalysis. He has developed new methods for observing dynamic phenomena at interfaces. This enables catalysts to be developed more effectively for industry.