

Gareth S. Parkinson

Date of Birth: 02 / 06 / 1981

Place of Birth: Darlington, UK

[Web Site](#) / [Google Scholar Profile](#) / [ORCID](#)

• EDUCATION

- 2016 Habilitation in Experimental Physics
Department of Physics, TU Wien, Vienna, Austria
- 2007 PhD – Surface Studies Using Medium Energy Ion Scattering
(Advisor D. P. Woodruff)
Department of Physics, University of Warwick, UK
- 2004 Masters Degree in Physics (MPhys)
Department of Physics, University of Warwick, UK

• POSITIONS HELD

- 2021 - Full Professor of Surface Reactivity
Institut für Angewandte Physik/ TU Wien
- 2017 - 2020 Associate Professor
Institut für Angewandte Physik, TU Wien
- 2015 – 2017 Assistant Professor (Laufbahnstelle)
Institut für Angewandte Physik, TU Wien
- 2010 – 2015 University Assistant
Institut für Angewandte Physik, TU Wien
- 2009 – 2010 Postdoctoral Researcher (supervisor U. Diebold)
Department of Physics, Tulane University, New Orleans LA, USA
- 2007 – 2009 Postdoctoral Researcher (supervisor B.D. Kay)
Pacific Northwest National Laboratory (PNNL), Richland WA, USA

RESEARCH INTERESTS

Since my appointment at the TU Wien in 2010, my research group has studied the atomic-scale processes underlying reactivity on metal-oxide surfaces. Iron oxides have been a major focus of my work because they are omnipresent in the natural environment and find widespread applications in technology. The work has been highly successful including papers in *Science*, *Nature Materials*, *PNAS*; *Physical Review Letters*, *Angewandte Chemie*, *ACS Nano*, *JACS*, and the *Journal of Physical Chemistry*. The highlight was our discovery that the Fe₃O₄(001) surface stabilizes arrays of single metal adatoms (Au, Ag, Pd, Ni...) to high temperatures, which makes an ideal model system to study fundamental aspects of “single-atom” catalysis (SAC). In 2015 I was awarded the FWF START prize (€ 1.2M over 6 years) to study the mechanisms of SAC. This work has generated much interest, illustrated by the invitations I have received to international conferences and seminars. In 2016, I published a single author review of Iron Oxide Surfaces in surface science reports. In 2020 I was awarded an ERC consolidator grant to expand my work on SAC to more realistic supports and atmospheres.

• PUBLICATION SUMMARY

81 articles in peer reviewed journals: 13 first author, 21 senior author. 3 single author
Articles include: 2 *Science*, 2 *PNAS*, 3 *Nature Materials*, 4 *Angewandte Chemie*, 4 *Physical Review Letters*, 1 *JACS*, 2 *ACS Nano*, 2 *ACS Catalysis*
Google scholar h-index – 32, ~4000 total citations

- **AWARDS**

- 2022 Elected as AVS fellow
- 2022 [Young Innovator Award in Nano Research](#) (Nanocatalysis)
- 2020 ERC Consolidator grant (€2m over 5 years)
- 2018 [Gaede-Prize](#) of the German Physical Society (DPG) “...*For his excellent experimental work on iron oxide surfaces as model systems for single atom catalysis.*” One prize annually for outstanding work in vacuum-related research.
- 2017 Kardinal Innitzer Förderungspreis (Awarded annually for best habilitation thesis in Austria)
- 2015 FWF START Prize (similar to ERC starting grant, ca. 8 per year in all of research, comes with €1.2 million in unrestricted research funds)
- 2013 Department of Energy Office of Science Postdoctoral Researcher Competition

- **PROFESSIONAL SERVICE**

- 2023 - Advisory board for Surface Science Discussions
- 2019 - Elected to IUVESTA Surface Science Division committee
- 2019 - Elected IUVESTA representative for Austria by the Austrian Vacuum Society (BWG)
- 2019 - Joined committee for “Fundamental Discoveries in Heterogeneous Catalysis Focus Session” at AVS
- 2018 - Appointed representative for the surface science division of the Austrian Physics Society (ÖPG)
- 2017 - 2019 Board of the Austrian Chemical-Physics Society (CPG)
- 2017 - 2019 AVS surface science division executive board
- 2011 – 2012 Member of Editorial Board, Energy Frontier Research Centre Newsletter

- **INVITED TALKS**

49 invited talks at international conferences, workshops and summer schools, including 2 keynote lectures, 3 plenary lectures and the „**Future Stars of the AVS“ Symposium**”.

26 invited seminars and colloquia at universities and research institutions (see full list for details).

- **CONFERENCE ORGANIZATION**

- 2022 Organizing symposium on Single Atom Catalysis at DPG 2022 Spring Meeting
- 2020-2022 Co-organizing “Fundamentals of heterogeneous catalysis” focus session at AVS 67 (cancelled due to Covid-19)
- 2019-2022 Organized surface science division sessions for joint ÖPG/SPG national meeting
- 2019 Co-organized “Fundamental Aspects of Materials Degradation” symposium at AVS 66 with Marcus Valtiner (TU Wien)
- 2017 Co-organized fundamentals of metal-oxide surface chemistry at DPG spring meeting with Joachim Paier (Helmholtz Univ. Berlin)

- **INSTITUTIONAL RESPONSIBILITIES**

- 2019 Ersatzmitglied for Appointment Committee Professorship “Experimentelle Quantentechnologie”
- 2019 Hauptmitglied for IAP in the TU Wien Physics Faculty Council (Fakultätsrat)
- 2019 Chair of “[Vienna young scientists symposium](#)” – Catalysis section
- 2016 – 2019 IAP “Mittelbau” representative on the TU Wien Physics Faculty Council
- 2016 – 2023 Member in 5 Habilitation committees

- **RESEARCH FUNDING**

Title	Funding Agency	Amount	Duration	Role
Advanced Single Atom Electrochemistry	EU - Marie Curie Fellowship for Hao Yin (EPFL)	300k	2023-2025	Supervisor
TU-dx – Towards applications of 2D materials and their heterostructures	Austrian Science Foundation – Docfunds Program	150k to GSP	2023-2027	PI
SFB: Taming complexity in Materials Modelling	Austrian Science Foundation	€4.8M (€430k to GSP)	2021-2026	PI
ERC Consolidator Grant	ERC	€2.0M	2020-2025	PI
FWF “START” Prize	Austrian Science Foundation	€1.2M	2015-2021	PI
Surface Science of Magnetite	Austrian Science Foundation – single investigator project	€152k	2013-2016	PI
TU-d Doctoral College	TU Wien	€76,5k (one PhD student)	2016-2019	PI
SFB ‘Functional Oxide Surfaces and Interfaces, FOXSI ’	Austrian Science Foundation	€2M	2015-2019	Co-Applicant
An Artificial Leaf: a photo-electro-catalytic cell from earth-abundant materials for sustainable solar production of CO ₂ -based chemicals and fuels (participant)	H2020 (EU)	€7.98M; (€547,612€ to TU Wien)	2016-2019	Participant
An Apparatus for Investigating Organic Molecules on Oxide Surfaces	TU Wien	€141k	2012-2014	Co-Applicant

- **PENDING FUNDING**

Title	Funding Agency	Amount	Duration	Role
Cluster of Excellence	Austrian Science Foundation	€34.4M (circa. €700k to GSP)	2023-2028	PI