

**PROF. DR. RALPH CLAESSEN****Personal data**

Date and place of birth: November 19, 1960  
in Düsseldorf

Marital status: married,  
two children (1995, 2000)

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**Areas of Research**

- Experimental condensed matter physics
- Electronic structure of complex solids, surfaces, and interfaces
- Topological and strongly correlated quantum materials
- Epitaxial thin film growth
- Electron and x-ray spectroscopy, especially with synchrotron radiation

**University education**

1998	Habilitation, Universität des Saarlandes
1991	<i>Dr. rer. nat.</i> , Christian-Albrechts-Universität (CAU) zu Kiel
1986	<i>Diplom</i> degree in physics, CAU Kiel
1980 - 1986	Study of physics at CAU Kiel and University of Cambridge (UK)

**Academic career**

2011	Offer of full professorship (W3) at Universität zu Köln (declined)
since 2004	Full professor (C4/W3), Lehrstuhl für Experimentelle Physik 4, Julius-Maximilians-Universität Würzburg
1998 - 2004	Associate professor (C3), Lehrstuhl Experimentalphysik II, Universität Augsburg
1992 - 1998	Research fellow with S. Hüfner, Universität des Saarlandes
1991 - 1992	Postdoc with J.W. Allen, University of Michigan (USA)

**Awards and fellowships**

1992	State Prize ( <i>Staatlicher Preis</i> ) of the Christian-Albrechts-Universität zu Kiel
1991 - 1992	Feodor-Lynen-Fellowship of the Alexander von Humboldt-Foundation
1980 - 1986	Scholarship of the German National Scholarship Foundation ( <i>Studienstiftung des Deutschen Volkes</i> )

**Service to the community**

since 2021	International Peer Review Panel, Independent Research Fund Denmark
2020	Evaluation Panel, Department of Physics, Universität Zürich, Switzerland
2020	Physics Review Panel of the Academy of Finland
since 2019	Founding member and spokesperson of Center of Excellence EXC2147 " <i>Complexity and Topology in Quantum Matter (ct.qmat)</i> " at JMU Würzburg and TU Dresden, together with Matthias Vojta (TUD)
since 2018	Project Review Panel, <i>Diamond Light Source</i> (UK)
2016 - 2018	Scientific Advisory Committee of the <i>Leibniz-Institut für Festkörper- und Werkstoffforschung (IFW)</i> , Dresden
since 2015	Founding member and spokesperson of <i>Sonderforschungsbereich SFB 1170 "Topological and Correlated Electronics at Surfaces and Interfaces (ToCoTronics)"</i> at JMU Würzburg
since 2014	Review Panel, <i>Advanced Light Source</i> (LBNL, Berkeley)
2014 - 2017	Project Review Panel, <i>PETRA-III</i> (DESY, Hamburg, Germany)
2014	Condensed Matter Physics Expert Advisory Panel, <i>Diamond Light Source</i> (UK)
2013 - 2019	Divisional Associate Editor, <i>Physical Review Letters</i>
2012 - 2016	Scientific Committee of the <i>Interdisciplinary Laboratories for Advanced Materials Physics</i> at the Università Cattolica, Milano (Italy)
2011 - 2015	Member of the <i>Senat</i> and <i>Hochschulrat</i> of the Julius-Maximilians-Universität Würzburg
2009 - 2016	Founding member and spokesperson of the DFG Research Unit ( <i>Forschergruppe</i> ) FOR 1162 " <i>Electron correlation-induced phenomena in surfaces and interfaces with tunable interactions</i> " at JMU Würzburg
2009 - 2011	Scientific Selection Panel, Helmholtz Center Berlin (HZB)
2008 - 2014	Scientific Advisory Committee, <i>Swiss Light Source</i> , Paul-Scherrer-Institut (Switzerland)
2008 - 2012	Elected member of the Review Board <i>Condensed Matter Physics</i> (Fachkollegium) of the DFG
2006 - 2008	German Committee for Research with Synchrotron Radiation (KFS)
2006 - 2008	Beamtime Selection Committee, <i>BESSY-II</i> (Berlin, Germany)
Reviewer for	National and international funding agencies: <i>Deutsche Forschungsgemeinschaft (DFG)</i> , <i>National Science Foundation (NSF)</i> , <i>Canadian Fund for Innovation (CFI)</i> , <i>Schweizer Nationalfonds (SNF)</i> , <i>Stichting voor Fundamenteel Onderzoek der Materie (FOM)</i> , <i>US Department of Energy (DoE)</i> , <i>Israel Science Foundation (ISF)</i> , <i>Academy of Finland</i> , <i>Independent Research Fund Denmark</i>  Fellowship foundations: <i>Alexander von Humboldt-Stiftung</i> , <i>Studienstiftung des deutschen Volkes</i>  Scientific journals: <i>Physical Review Letters</i> , <i>Physical Review B</i> , <i>Science</i> , <i>Nature</i> , <i>Nature Physics</i> , <i>Nature Communications</i> , <i>Journal of Physics: Condensed Matter</i> etc.
Organization of	>25 national and international conferences, workshops, and schools since 2001

**Ten selected publications**

- R. Stühler, A. Kowalewski, F. Reis, D. Jungblut, F. Dominguez, B. Scharf, G. Li, J. Schäfer, E.M. Hankiewicz, and **R. Claessen**  
*Effective lifting of the topological protection of quantum spin Hall edge states by edge coupling*  
Nat. Commun. **13**, 3480 (2022).
- M. Bauernfeind, J. Erhardt, P. Eck, P.K. Thakur, J. Gabel, T.-L. Lee, J. Schäfer, S. Moser, D. Di Sante, **R. Claessen**, and G. Sangiovanni  
*Design and realization of topological Dirac fermions on a triangular lattice*  
Nat. Commun. **12**, 5396 (2021).
- R. Stühler, F. Reis, T. Müller, T. Helbig, T. Schwemmer, R. Thomale, J. Schäfer, and **R. Claessen**  
*Tomonaga-Luttinger liquid in the edge channels of a quantum spin Hall insulator*  
Nat. Phys. **16**, 47 (2020).
- F. Adler, S. Rachel, M. Laubach, J. Maklar, A. Fleszar, J. Schäfer, and **R. Claessen**  
*Correlation-driven charge order in a frustrated two-dimensional atom lattice*  
Phys. Rev. Lett. **123**, 086401 (2019).
- F. Reis, G. Li, L. Dudy, M. Bauernfeind, S. Glass, W. Hanke, R. Thomale, J. Schäfer, and **R. Claessen**  
*Bismuthene on a SiC substrate: A candidate for a high-temperature quantum spin Hall material*  
Science **357**, 287 (2017).
- J.E. Kleibeuker, Z. Zhong, H. Nishikawa, J. Gabel, A. Müller, F. Pfaff, M. Sing, K. Held, **R. Claessen**, G. Koster, and G. Rijnders  
*Electronic reconstruction at the isopolar LaTiO<sub>3</sub>/LaFeO<sub>3</sub> interface: An x-ray photoemission and density-functional theory study*  
Phys. Rev. Lett. **113**, 237402 (2014).
- G. Berner, M. Sing, H. Fujiwara, A. Yasui, Y. Saitoh, A. Yamasaki, Y. Nishitani, A. Sekiyama, N. Pavlenko, T. Kopp, C. Richter, J. Mannhart, S. Suga, and **R. Claessen**  
*Direct k-space mapping of the electronic structure in an oxide-oxide interface*  
Phys. Rev. Lett. **110**, 247601 (2013).
- G. Li, P. Höpfner, J. Schäfer, C. Blumenstein, S. Meyer, A. Bostwick, E. Rotenberg, **R. Claessen**, and W. Hanke  
*Magnetic order in a frustrated two-dimensional atom lattice at a semiconductor surface*  
Nat. Commun. **4**, 1620 (2013).
- C. Blumenstein, J. Schäfer, S. Mietke, S. Meyer, A. Dollinger, M. Lochner, X.Y. Cui, L. Patthey, R. Matzdorf, and **R. Claessen**  
*Atomically controlled quantum chains hosting a Tomonaga-Luttinger liquid*  
Nat. Phys. **7**, 776 (2011).
- M. Sing, G. Berner, K. Goß, A. Müller, A. Ruff, A. Wetscherek, S. Thiel, J. Mannhart, S.A. Pauli, C.W. Schneider, P.R. Willmott, M. Gorgoi, F. Schäfers, and **R. Claessen**  
*Profiling the interface electron gas of LaAlO<sub>3</sub>/SrTiO<sub>3</sub> heterostructures by hard X-ray photoelectron spectroscopy*  
Phys. Rev. Lett. **102**, 176805 (2009).