

**Current position**

Head of the High-Temperature Composite Materials section at Institute of Energy and Climate Research - Microstructure and Properties of Materials (IEK-2), FZJ (since 2016)

Previous positions (two selected)

Project Leader of the “Tungsten material characterization program” (2014-2016);
PostDoc position/ Research Scientist Forschungszentrum Jülich (2012-2016)

Scientific degrees

Dr. rer. nat (PhD) in Physics, RWTH Aachen (2012)

Recent research topics

Transient high heat flux testing, hydrogen plasma loading, refractory metals, microstructure analysis, mechanical and thermo-physical characterization, additive manufacturing, selective laser melting, finite element modelling

Awards, honors, memberships

- Publication Committee - International Conf. on Plasma-Facing Materials and Components in 2013 and 2017
- Winner of the Borchers-Badge, RWTH Aachen University, 2014

Publications/Patents (5 most important)

- **M. Wirtz, S. Bardin, A. Huber, A. Kreter, J. Linke, et al.**, Impact of combined hydrogen plasma and transient heat loads on the performance of tungsten as plasma facing material, *Nucl. Fusion* 55 (12),123017 (2015) [doi:10.1088/0029-5515/55/12/123017](https://doi.org/10.1088/0029-5515/55/12/123017)
- **B. Spilker, J. Linke, G. Pintsuk, M. Wirtz**, Oxide Segregation and Melting Behavior of Transient Heat Load Exposed Beryllium, *Nucl. Fusion* 58, 106014 (2016) [doi:10.1088/0029-5515/56/10/106014](https://doi.org/10.1088/0029-5515/56/10/106014)
- **M. Wirtz, M. Berger, A. Huber, A. Kreter, J. Linke, et. al.**, Influence of Helium Induced Nanostructures on the Thermal Shock Performance of Tungsten, *Nucl. Materials and Energy*, 9, 177 (2016) [doi:10.1016/j.nme.2016.07.002](https://doi.org/10.1016/j.nme.2016.07.002)
- **M. Wirtz, J. Linke, Th. Loewenhoff, G. Pintsuk, I. Uytendhouwen**, Transient Heat Load Challenges for Plasma-Facing Materials during Long-Term Operation, *Nucl. Materials and Energy*, 12, 148 (2017) [doi:10.1016/j.nme.2016.12.024](https://doi.org/10.1016/j.nme.2016.12.024)
- **M. Wirtz, I. Uytendhouwen, V. Barabash, F. Escourbiac, T. Hirai, et. al.**, Material Properties and Their Influence on the Behaviour of Tungsten as Plasma Facing Material, *Nucl. Fusion* 57 (6), 066018 (2017) [doi:10.1088/1741-4326/aa6938](https://doi.org/10.1088/1741-4326/aa6938)