

Dr Maja Rücker

Assistant Professor
Department of Mechanical Engineering
Eindhoven University of Technology
PO Box 513, 5600 MB Eindhoven, Netherlands
Email: m.rucker15@imperial.ac.uk

Education and Professional Career

2009-2013 BSc in Geoscience at Johannes-Gutenberg University, Mainz, Germany
2012-2014 MSc in Geoscience at Johannes-Gutenberg University, Mainz, Germany
2014-2019 PhD studies in Petroleum Engineering at Imperial College, London, UK and Shell Global Solutions International B.V., Rijswijk, the Netherlands
2018-2020 Research Associate/Assistant in the Chemical Engineering Department at Imperial College, London, UK
Since 2020 Assistant Professor in the Department of Mechanical Engineering at the Eindhoven University of Technology, Netherlands

Commitment, Appointments and Scientific Volunteer Jobs

Since 2015 Member of Interpore
Since 2020 Member of the National Chapters Committee of Interpore
2016-2017 Secretary and founding member of the student affairs committee of Interpore
Organizer of the career events and social networking events for students at Interpore 2016 and Interpore 2017
Organizer and Lecturer of the microCT short course at Interpore 2017

Since 2020 Irène Curie Fellowship
Since 2020 Visiting Researcher in the Chemical Engineering Department at Imperial College London

Since 2020 Founding member in the organizing team of the PorousMedia TeaTimeTalks – a Youtube webinar series for young researchers to communicate their research on porous media, which was formed as a response to the COVID-19 pandemic

Since 2015 Reviewer for various Journals
(incl. Proceedings of the National Academy of Sciences, Journal of Colloids and Interface Science, Applied Geochemistry, Scientific Reports, Advances in Water Resources, Energy and Fuels, Journal of Petroleum Science and Engineering and SPE Journal)

Professional Awards, Offers and Recognitions

2017 Interpore Rosette
2020 highly commended by the Sir William Wakeham award committee 2020

Most important Publications (maximum 10)

(Peer reviewed journal articles / books / patents)

- [1] M. Rücker, W.-B. Bartels, G. Garfi, M. Shams, T. Bultreys, M. Boone, S. Pieterse, G. C. Maitland, S. Krevor, V. Cnudde, H. Mahani, S. Berg, A. Georgiadis, and P. F. Luckham. Relationship between Wetting and Capillary Pressure in a Crude Oil/Brine/rock system: From Nano-Scale to Core-Scale. *Journal of Colloids and Interface Science*, 562, 159-169, 2020.
- [2] M. Rücker, S. Berg, R. T. Armstrong, A. Georgiadis, H. Ott, A. Schwing, R. Neiteler, N., Brussee, A. Makurat, L. Leu, M. Wolf, F. Khan, F. Enzmann and M. Kersten. From connected pathway flow to ganglion dynamics. *Geophysical Research Letters*, 42(10), 3888-3894, 2015.
- [3] M. Rücker, M., W.-B. Bartels, T. Bultreys, M. Boone, K. Singh, G. Garfi, A. Scanziani, C. Spurin, S. Krevor, M. J. Blunt, O. Wilson, H. Mahani, V. Cnudde, P. F. Luckham, A. Georgiadis

- and S. Berg. Workflow for upscaling wettability from the nano- to core-scale. *Petrophysics*, 61 (02), 189-205, 2020.
- [4] S. Yesufu-Rufai, M. Rücker, S. Berg, S. F. Lowe, F. Marcelis, A. Georgiadis, and P. F. Luckham. Assessing the wetting state of minerals in complex sandstone rock in-situ by Atomic Force Microscopy (AFM). *Fuel*, 273, 117807, 2020.
- [5] M. Rücker, W.-B. Bartels, K. Singh, N. Brussee, A. Coorn, H. A. van der Linde, A. Bonnin, H. Ott, S. M. Hassanizadeh, M. J. Blunt, H. Mahani, A. Georgiadis and S. Berg. The effect of mixed wettability on pore-scale flow regimes based on a flooding experiment in Ketton limestone. *Geophysical Research Letters*, 46(6), 3225-3234, 2019.
- [6] S. Berg, M. Rücker, H. Ott, A. Georgiadis, H. Van der Linde, F. Enzmann, M. Kersten, R. T. Armstrong, S. de With, J. Becker, and A. Wiegmann. Connected pathway relative permeability from pore-scale imaging of imbibition. *Advances in Water Resources*, 90, 24-35, 2016.
- [7] S. Schlüter, S. Berg, M. Rücker, R.T. Armstrong, H. Vogel, R. Hilfer and D. Wildenschild. Pore-scale displacement mechanisms as a source of hysteresis for two-phase flow in porous media. *Water Resources Research*, 52(3), 2194-2205, 2016.
- [8] E. Unsal, M. Rücker, S. Berg, W.-B. Bartels and A. Bonnin. Imaging of compositional gradients during in situ emulsification using X-ray micro-tomography. *Journal of Colloid and Interface science*, 550, 159-169, 2019
- [9] W.-B. Bartels, M. Rücker, M. Boone, T. Bultreys, H. Mahani, S. Berg, S. M. Hassanizadeh, and V. Cnudde. Imaging spontaneous imbibition in full Darcy-scale samples at pore-scale resolution by fast X-ray tomography. *Water Resources Research*, 55, 1-14, 2019
- [10] L. Zheng, M. Rücker, T. Bultreys, A. Georgiadis, M. M. Mooijer-van den Heuvel, F. Bresme, J. P. M. Trusler, E. A. Müller. Surrogate models for studying the wettability of nanoscale natural rough surfaces using molecular dynamics. *Energies*, 13(11), 2770, 2020.