

MTET TOPIC 5: RESOURCE AND ENERGY EFFICIENCY

Subtopic 5.1: Anthropogenic Carbon Cycle

Prof. Dr. Nicolaus Dahmen

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Current positions

Head of the Division “Thermochemical Biomass Conversion” at Institute of Catalysis Research and Technology (since 2005)

Professor, KIT faculty of chemical Engineering (since 2014)

Previous positions

Head of the Division “High Pressure Technology”, Institute of Technical Chemistry, KIT (FZK at that time)

Scientific degrees

Dr. (PhD) in at Ruhr University Bochum (1992)

Habilitation at Heidelberg University, Physical Chemistry Institute (2010)

Recent research topics

Thermochemical biomass conversion (fast pyrolysis, hydrothermal liquefaction, hydrosolvolytic), bio-oil production and upgrading, chemical reaction engineering, process scale-up, combination of bio- and thermochemical processes

Awards, honors, memberships

Deputy national representative IEA Task 39 Biofuels (2016), Spokesman of Research area Lignocellulose of the Bioeconomy Research Program in Baden-Württemberg (2014), KIT representative at EERA and ETIB Bioenergy (2011)

Publications/Patents (5 most important)

- **B. Guo, V. Walter, U. Hornung, N. Dahmen**, Hydrothermal liquefaction of *Chlorella vulgaris* and *Nannochloropsis gaditana* in a continuous stirred tank reactor and hydrotreating of biocrude by nickel catalysts, *Fuel Processing Technology* 191, 168–180 (2019) [doi:10.1016/j.fuproc.2019.04.003](https://doi.org/10.1016/j.fuproc.2019.04.003)
- **C. Carriel Schmitt, M. Gagliardi Reolon, M. Zimmermann, K. Raffelt, J.-D. Grunwaldt, N. Dahmen**, Synthesis and Regeneration of Nickel-Based Catalysts for Hydrodeoxygenation of Beech Wood Fast Pyrolysis Bio-Oil, *Catalysts* 8, 449 (2018) [doi:10.3390/catal8100449](https://doi.org/10.3390/catal8100449)
- **Y. Ille, F. Kröhl, A. Velez, A. Funke, S. Pereda, K. Schaber, N. Dahmen**, Activity of water in pyrolysis oil—Experiments and modelling, *J. Anal. Appl. Pyrolysis* 135, 260-270 (2018) [doi:10.1016/j.jaap.2018.08.027](https://doi.org/10.1016/j.jaap.2018.08.027)
- **N. Dahmen, I. Lewandowski, S. Zibek, A. Weidtmann**, Integrated lignocellulosic value chains in a growing bioeconomy: Status quo and perspectives, *GCB Bioenergy*, First published: 12 December 2018, [doi:10.1111/gcbb.12586](https://doi.org/10.1111/gcbb.12586)
- **A. Kruse, N. Dahmen**, Hydrothermal biomass conversion: Quo vadis? *Journal of Supercritical Fluids* 134, 114-123 (2018) [doi:10.1016/j.supflu.2017.12.035](https://doi.org/10.1016/j.supflu.2017.12.035)