

## Reviewed Publications Olaf Deutschmann et. al. overview

### 2024

(335) O. Furst, O. Deutschmann Development and calibration of a fast flow model for solid oxide cell stack internal manifolds. Journal of Power Sources, accepted 4.6.2024

(334) L. Wehrle, A. Ashar, O. Deutschmann, R.J Braun. Evaluating high power density, direct-ammonia SOFC stacks for decarbonizing heavy-duty transportation applications. Appl. Energy, accepted 3.6.2024

(333) C. Kuhn, M. Kirn, S. Tischer, O. Deutschmann. Micron-sized iron particles as energy carrier: Cycling experiments in a fixed-bed reactor. Proceedings of the Combustion Institute (2024), accepted for publication.

(332) C. Kuhn, A. Knapp, M.P. Deutschmann, J. Spielmann, S. Tischer, U.I. Kramm, H. Nirschl, O. Deutschmann. Iron as recyclable metal fuel: Unraveling oxidation behavior and cyclization effects through thermogravimetric analysis, wide-angle X-ray scattering and Mössbauer spectroscopy. ChemSusChem (2024) accepted 3.5.2024

(331) J. Spielmann, D. Braig, A. Streck, T. Gustmann, C. Kuhn, F. Reinauer, A. Kurnosov, O. Leubner, V. Potapkin, C. Hasse, O. Deutschmann, B. Etzold, A. Scholtissek, U. Kramm. Exploring the oxidation behaviour of iron particles for large scale energy storage. Phys. Chem. Chem.Phys. 26 (2024) 13049-13060. <https://doi.org/10.1039/d3cp03484d>

(330) M. Mokashi, A.B. Shirsath, A. Çelik, P. Lott, H. Müller, S. Tischer, L. Maier, J. Bode, D. Schlereth, F. Scheiff, D. Flick, M. Bender, K. Ehrhardt, O. Deutschmann. Methane pyrolysis in packed bed reactors: kinetic modeling, numerical simulations, and experimental insights. Chem. Eng. J. (2024). <https://doi.org/10.1016/j.cej.2024.149684>

(329) P. Lott, K. Schäfer, O. Deutschmann, M. Werner, P. Weinmann, L. Zimmermann, H. Toebben. Reducing emissions from lean-burn hydrogen combustion engines using a state-of-the-art oxidation catalyst and a VWTi-based SCR catalyst: Potentials and challenges . SAE Technical Paper (2024) 2024-01-2634. <https://doi.org/10.4271/2024-01-2634>

(328) J. Chawla, S. Schardt, P. Lott, S. Angeli, S. Tischer, L. Maier, O. Deutschmann. Detailed Kinetic Modeling of Catalytic Oxidative Coupling of Methane, Chem. Eng. J. (2024) 148719. <https://doi.org/10.1016/j.cej.2024.148719>

(327) Y. Wang, J. Shib, X. Gu, O. Deutschmann, Y. Shi, N. Cai. Toward Mobility of Solid Oxide Fuel Cells. Progress in Energy and Combustion Science 102 (2024) 101141. <https://doi.org/10.1016/j.pecs.2023.101141>

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(326) D. Hodonj, M. Borchers, L. Zeh, G. T. Hoang, S. Tischer, P. Lott, O. Deutschmann. Impact of operation parameters and lambda input signal during lambda-dithering of three-way catalysts for low-temperature performance enhancement. *Applied Catalysis B: Environmental* 345 (2024) 123657.

<https://doi.org/10.1016/j.apcatb.2023.123657>

(325) R. Chacko, H. Gossler, S. Angeli, O. Deutschmann. Interconnected Digital Solutions to Accelerate Modeling of the Reaction Kinetics in Catalysis. *ChemCatChem* (2024) e202301355.

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(324) M. Mokashi, A. Shirsath, P. Lott, H. Müller, S. Tischer, L. Maier, O. Deutschmann. Understanding of gas-phase methane pyrolysis towards hydrogen and solid carbon with detailed kinetic simulations and experiments, *Chemical Engineering Journal* 479 (2024) 147556.

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(323) S. Wan, T. Häber, P. Lott, R. Suntz, O. Deutschmann. Experimental investigation of NO reduction by H<sub>2</sub> on Pd using planar laser-induced fluorescence. *Applications in Energy and Combustion Science* (2023) 16 (2023) 100229.

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(322) P. Blanck, G. Kass, K.P. Kinzel, O. Deutschmann. Dry reforming of steelworks off-gases in a pilot plant integrated into a steel mill: influence of operating parameters. *Energy Advances* 3 (2024) 123-130.

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(321) A. Çelik, I.B. Othman, H. Müller, P. Lott, O. Deutschmann. Pyrolysis of biogas for carbon capture and carbon dioxide-free production of hydrogen. *Reaction Chemistry & Engineering* 9 (2024) 108-118.

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(320) P. Lott, M. Casapu, J.-D. Grunwaldt, O. Deutschmann. A review on exhaust gas after-treatment of lean-burn natural gas engines – From fundamentals to application. *Appl. Catal. B: Env.* 340 (2024) 123241.

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(319) B. Kreitz, P. Lott, A.J. Medford, F. Studt, O. Deutschmann; C.F. Goldsmith. Automated Generation of Microkinetics for Heterogeneously Catalyzed Reactions Considering Correlated Uncertainties. *Angew. Chemie Intl. Ed.* 62 (2023) e20230651.

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(318) H. Többen, A. Paule, P. Weinmann, T. Wolf, L. Zimmermann, P. Lott, S. Bastian, O. Deutschmann. Formation of N<sub>2</sub>O in the Exhaust Line of Combustion Engines. *SAE Technical Paper* 2023-01-5045 (2023).

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(317) A.B. Shirsath, M.L. Schulte, B. Kreitz, S. Tischer, J.-D. Grunwaldt, O. Deutschmann. Spatially-resolved investigation of CO<sub>2</sub> methanation over Ni/γ-Al<sub>2</sub>O<sub>3</sub> and Ni<sub>3.2</sub>Fe/γ-Al<sub>2</sub>O<sub>3</sub> catalysts in a packed-bed reactor. *Chem. Eng. J.* 469 (2023) 143847.

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(316) K. Keller, P. Lott, S. Tischer, M. Casapu, J.-D. Grunwaldt, O. Deutschmann. Methane oxidation over PdO: Towards a better understanding of the influence of the support material. *ChemCatChem* 15 (2023) e202300366.

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(315) L. Wehrle, A. Ashar, O. Deutschmann, R.J. Braun. Modeling High-Power Density Ceria-Based Direct Ammonia Fueled SOFC Stacks for Mobile Applications. ECS Transactions 111 (2023) 753-762.  
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(310) L. Warmuth, P. Lott, O. Deutschmann, C. Feldmann. MOx@VOx-Pd-type Nanorods and Nanotubes as Catalyst Support for Selective Catalytic Reduction of NO. ChemCatChem 15 (2023) e202201354.  
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(305) C. Kuhn, A. Düll, P. Rohlf, S. Tischer, M. Börnhorst, O. Deutschmann. Iron as recyclable energy carrier: Feasibility study and kinetic analysis of iron oxide reduction. Application in Energy and Combustion Science 12 (2022) 100096.

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(302) C. Karakaya, M. Kidder, C. Wolden, R.J. Kee, O. Deutschmann. Mechanistic interpretations and insights for the oxidative dehydrogenation of propane via CO<sub>2</sub> over Cr<sub>2</sub>O<sub>3</sub>/Al<sub>2</sub>O<sub>3</sub> catalysts. Ind. Eng. Chem. Res. 61 (2022) 14482–14493.

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(300) H. Gossler, J. Riedel, E. Daymo, R. Chacko, S. Angeli, O. Deutschmann. A New Approach to Research Data Management with a Focus on Traceability: Adacta. Chemie Ingenieur Technik 94 (2022) 1798-1807.

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