

Publication list:

1. Peer peer-reviewed articles

2024

1. Hieu Linh Duong, Sven Paufler, Hauke Harms, Thomas Maskow, Dietmar Schlosser (2024) Biocalorimetry-aided monitoring of fungal pretreatment of lignocellulosic agricultural residues. *Applied Microbiology and Biotechnology* 108: 394 ([10.1007/s00253-024-13234-y](https://doi.org/10.1007/s00253-024-13234-y))
2. Christian Fricke, **Eliana Di Lodovico**, Maximilian Meyer, **Thomas Maskow**, Gabriele E. Schaumann (2024) Design, calibration and testing of a novel isothermal calorimeter prototype. *Thermochimica Acta* 738: 179785 (<https://doi.org/10.1016/j.tca.2024.179785>); IF=3.1)
3. Matthias Kästner, **Thomas Maskow**, Anja Miltner, Marcel Lorenz, Sören Thiele-Bruhn (2024) Assessing energy fluxes and carbon use in soil as controlled by microbial activity - a thermodynamic perspective. *Soil Biology and Biochemistry* 193: 109403 (DOI: /10.1016/j.soilbio.2024.109403; IF=5.795)
4. Marcel Lorenz, **Thomas Maskow**, Sören Thiele-Bruhn (2024) Energy stored in soil organic matter is influenced by litter quality and the degree of transformation – a combustion calorimetry study. *Geoderma* 443: 116846 (DOI: /10.1016/j.geoderma.2024.116846; IF=6,1))
5. Shiyue Yang, Eliana Di Lodovico, Alina Rupp, Hauke Harms, Christian Fricke, Anja Miltner, Matthias Kästner and **Thomas Maskow** (2024) Enhancing Insights: Exploring the Information Content of Calorespirometric Ratio in Dynamic Soil Microbial Growth Processes through Calorimetry. *Frontiers Microbiology; Section Terrestrial Microbiology* 15 (doi: 10.3389/fmicb.2024.1321059; IF=6.064)
6. Matthias Kästner, **Thomas Maskow**, Anja Miltner, Marcel Lorenz, Sören Thiele-Bruhn, Tobias Bölscher, Sergey Blagodatsky, Thilo Streck, Holger Pagel, Evgenia Blagodatskaya (2024) Gibbs energy or enthalpy - What is relevant for microbial C-turnover in soils? A letter to Wang & Kuzyakov, *Global Change Biology* (DOI 10.1111/gcb.17183, IF=11.6)
7. Stumpf, K., Simon, C., Miltner, A., **Maskow, T.**, Lechtenfeld, O. (2024): Deciphering the energy use channels in soil organic matter: Impacts of long-term farmyard manure addition and microbial necromass revealed by LC-FT-ICR-MS. *ChemRxiv* 10.26434/chemrxiv-2024-txqzj
8. Varsadiya, M., Dehghani, F., Yang, S., Blagodatskaya, E., **Maskow, T.**, Meier, D.V., Lueders, T. (2024): Carbon and energy utilization in microbial cell extracts from soil. SSRN 10.2139/ssrn.4962119
9. Yang, S., Di Lodovico, E., Rupp, A., Harms, H., Fricke, C., Miltner, A., Kästner, M., **Maskow, T.** (2024): Enhancing insights: exploring the information content of calorespirometric ratio in dynamic soil microbial growth processes through calorimetry. *Front. Microbiol.* 15 , art. 1321059 [10.3389/fmicb.2024.1321059](https://doi.org/10.3389/fmicb.2024.1321059)
10. Yang, S., Rupp, A., Kästner, M., Harms, H., Miltner, A., **Maskow, T.** (2024): Experimental access to cellulose oxidation and the dynamics of microbial carbon and energy use in artificial soil under varying temperature, water content, and C/N ratio. SSRN 10.2139/ssrn.4951746

2023

11. **Maskow, T.** Schlosser, D. (2023) Lignocellulose-Verwertung durch Pilze mit metabolischer Wärme erfassen. *Biospektrum* 29 (3), 321-323, IF=0.104)

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12. Zhou, L.-J., Wang, Y.-Y., Li, S.-L., Cao, L., Jiang, F.-J., **Maskow, T.**, Liu, Y. (2022) Core-Shell Polydopamine/Cu Nanometer Rods Efficiently Deactivate Microbes by Mimicking Chloride-Activated Peroxidases. *ASC Omega* 7 (34), 29984-29994, IF=3.512)
13. Duong, H.L., Paufler, S., Harms, H., Schlosser, D., **Maskow, T.**, (2022) Fungal Lignocellulose Utilisation Strategies from a Bioenergetic Perspective: Quantification of Related Functional Traits Using Biocalorimetry. *Microorganisms* 10(8), 1675, IF=3.864)

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14. Duong, H.L., Paufler, S., Harms, H., **Maskow, T.**, Schlosser, D. (2021) Applicability and information value of biocalorimetry for the monitoring of fungal solid-state fermentation of lignocellulosic agricultural by-products. *New Biotechnology* 66, 97-106 (IF=5.079)
15. Fricke, C., Klee, T., Richter, S., Paufler, S., Harms, H., **Maskow, T.** (2021) Numerical heat flow and transport simulation as a development tool for the design of isothermal microcalorimeters. *Thermochimica Acta* 706: 179070 (IF=2.762)
16. Korth, B., Heber, C., Normant-Saremba, M., **Maskow, T.**, Harnisch, F. (2021) Precious data from tiny samples: Revealing the correlation between energy content and the chemical oxygen demand of municipal wastewater using micro-bomb combustion calorimetry. *Frontiers in Energy Research* 9: 705800 (IF=2.746)
17. Held, C., Greinert, T., Vogel, K., **Maskow, T.** (2021) A New Thermodynamic Activity-Based Approach Allows Predicting the Feasibility of Glycolysis. *Scientific Reports* 11:6125 (IF=3.998)
18. Vogel, K., Wei, R., Pfaff, L., Breite, D., Al-Fathi, H., Ortmann, Ch., Estrela-Lopis, I., Venus, T., Schulze, A., Harms, H., Bornscheuer, U., **Maskow, T.** (2021) Enzymatic degradation of polyethylene terephthalate nanoplastics analyzed in real time by isothermal titration calorimetry. *Science of the Total Environment* 773: 145111 (IF=6.551)

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19. Vogel, K., Greinert, T., Reichard, M., Held, C., Harms, H., **Maskow, T.** (2020) Thermodynamics and Kinetics of Glycolytic Reactions. Part I: Kinetic modeling based on irreversible thermodynamics and validation by calorimetry *International Journal of Molecular Sciences* 21: 8341 (IF=4.556)
20. Vogel, K., Greinert, T., Reichard, M., Held, C., Harms, H., **Maskow, T.** (2020) Thermodynamics and Kinetics of Glycolytic Reactions. Part II: Influence of Cytosolic Conditions on Thermodynamic State Variables and Kinetic Parameters. *International Journal of Molecular Sciences* 21: 7921 (IF=4.556)
21. Vogel, K., Greinert, T., Harms, H., Sadowski, G, Held, C., **Maskow, T.** (2020) Influence of cytosolic conditions on the reaction equilibrium and the reaction enthalpy of the enolase reaction accessed by calorimetry and van 't Hoff. *BBA – General Subjects* 1864: 129675 (IF=3.422)
22. Fricke, C., Harms, H., **Maskow, T.** (2020) How to speed up the detection of aerobic microbial contaminations by using isothermal microcalorimetry. *Journal of Thermal Analysis and Calorimetry* 142: 1933-1949 (IF=2.731)
23. Vogel, K., Greinert, T., Held, C., Harms, H., **Maskow, T.** (2020) Application of irreversible thermodynamics to determine the influence of cell mimicking conditions on the kinetics of equilibrium reactions of the glycolysis. *Biophys. J.* 118 (3, Suppl. 1), 346a - 347a (IF=3.854)
24. Greinert, T., Vogel, K., Mühlenweg, J.-K., Sadowski, G., **Maskow, T.**, Held, C. (2020) Standard Gibbs energy of metabolic reactions: VI. Glyceraldehyde 3-phosphate dehydrogenase reaction. *Fluid Phase Equilibria* 517: 112597 (IF=2.838)
25. Greinert, T., Vogel, K., Seifert, A.-I., Seifert, R., Andreeva, I.V., Verevkin, S.P., **Maskow, T.**, Sadowski, G., Held, C. (2020) Standard Gibbs energy of metabolic reactions: V. enolase reaction. *BBA - Proteins and Proteomics* 1868: 140365 (IF=2.371)
26. Fricke, C., Xu, J., Jiang, F.-L., Liu, Y., Harms, H., **Maskow, T.** (2020) Rapid culture-based detection of *Legionella pneumophila* using isothermal microcalorimetry with an improved evaluation method. *Microbial Biotechnology* 13(4): 1262-1272 (IF=5.328)

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27. Fricke, C., Harms, H., **Maskow, T.** (2019) Rapid Calorimetric Detection of Bacterial Contamination: Influence of the Cultivation Technique. *Frontiers in Microbiology* 10: 2530 (IF=4.236)
28. **Maskow, T.**, Rothe, A., Jakob, T., Paufler, S., Wilhelm, C. (2019) Photocalorespirometry (Photo-CR): A novel method for access to photosynthetic energy conversion efficiency. *Scientific Reports* 9: 9298 (IF=3.998)

2018

29. Fiedler, D, **Maskow, T.** (2018) A note of thanks from the guest editors to Professor Wolfgang Babel—An inspiring researcher and highly esteemed teacher. *Engineering in Life Sciences* 18: 412-413 (IF=1.936)
30. Xu, J., He, H., Wang, Y.-Y., Yan, R., Zhou, L.-J., Jiang, F.-L., **Maskow, T.**, Liu, Y. (2018) New Aspects of the Environmental Risks of Quantum Dots: Prophage Activation. *Environmental Science - Nano* 5(7):15561566 (IF=7.683)
31. Russel, M., Marios, S., JiaJia, S., Xu, W., Xiao, L., **Maskow, T.**, Alam, M.M., Georgiou, J. (2018) HighFrequency, dielectric spectroscopy for the detection of electrophysiological/biophysical differences in different bacteria types and concentrations. *Analytica Chimica Acta* 1018: 86-95 (IF=5.977)
32. Xu, J., Jiang, F.-J., Liu, Y., Kiesel, B., **Maskow, T.** (2018) An enhanced bioindicator for calorimetric monitoring of prophage-activating chemicals in the trace concentration range. *Engineering in Life Sciences* 18: 475-483 (IF=1.936)
33. Xu, J., Kiesel, B., Kallies, R., Jiang, F.-L., Liu, Y., **Maskow, T.** (2018) A fast and reliable method for monitoring of prophage-activating chemicals. *Microbial Biotechnology* 11(6): 1112-1120 (IF=5.328)

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34. Korth, B., **Maskow, T.**, Günther, S., Harnisch, F. (2017) Estimating the energy content of wastewater using combustion calorimetry and different drying processes. *Frontiers in Energy Research*, 5:23. DOI 10.3389/fenrg.2017.0.00023 (IF=2.746)
35. Korth, B., **Maskow, T.**, Harnisch, F. (2017) Bioelektrokalorimetrie – der mikrobielle elektrochemische Peltier-Effekt. *Biospektrum* 23(2): 220-222
36. Zhou Z-Q, Yang L-Y, Yan R., Zhao J, Liu Y-Q, Lai L, Jiang F-L, **Maskow T**, Liu Y (2017) Mn-doped ZnSe quantum dots initiated mild and rapid cation exchange for tailoring composition and optical properties of colloid nanocrystals: novel template, new applications. *Nanoscale* 9(8): 2824-2835 (IF=7.760)
37. Altwasser V, Pätz R.R., Lemke T, Paufler S, **Maskow T** (2017) A simple Method for the Measurement of Metabolic Heat Production Rates **Maskow T** during Solid-State Fermentations Using β -Carotene Production with *Blakeslea trispora* as a Model System. *Engineering in Life Sciences* 17: 620-628

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38. Korth B, **Maskow T**, Picioreanu C, Harnisch F (2016) The microbial electrochemical Peltier heat: an energetic burden and engineering chance for primary microbial electrochemical technologies. *Energy & Environmental Science* 9: 2539-2544 (IF=25.427)
39. Rohde M-T, Paufler S, Harms H, **Maskow T** (2016) Calorespirometric Feeding Control Enhances Bioproduction from Toxic Feedstocks – Demonstration for Biopolymer Production out of Methanol. *Biotechnology and Bioengineering* 113(10): 2113-2121

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40. Herke Z, **Maskow T**, Nemeth ZI (2015) A new method for detecting cross-inhibition effects in the environmental biocatalytic processes. *BioTechnologica* 96(4): 279-284
41. **Maskow T**, Paufler S (2015) What does calorimetry and thermodynamics of living cells tell us? *Methods* 76: 3-10
42. Przybylski D, Rohwerder T, Dillßner C, **Maskow T**, Harms H, Müller RH (2014) Exploiting mixtures of H₂, CO₂ and O₂ for improved production of methacrylate precursor 2-hydroxyisobutyric acid by engineered *Cupriavidus necator* strains. *Applied Microbiology and Biotechnology* 99:2131-2145

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44. **Maskow T**, Mariana Morais F, Rosa LFM, Qian YG, Harnisch F (2014). Insufficient Oxygen Diffusion Leads to Distortions of Microbial Growth Parameters Assessed by Isothermal Microcalorimetry, *RSC Advances* 4: 32730-32737

45. Mariana Morais F, Buchholz F, Hartmann T, Lerchner J, Neu TR, Kiesel B, Harms H, **Maskow T** (2014). Chip-calorimetric Monitoring of Biofilm Eradication with Bacteriophages Reveals an Unexpected Infection Related Heat Profile. *Journal of Thermal Analysis and Calorimetry*, 115: 2203-2210

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46. Hartmann T, Mühling M, Wolf A, Mariana F, **Maskow T**, Mertens F, Neu T.R., Lerchner J (2013) A Chipcalorimetric Approach to the Analysis of Ag Nanoparticle Caused Inhibition and Inactivation of Beadsgrown Bacterial Biofilms. *Journal of Microbiological Methods* 95: 129-137

47. Paufler S, Weichler M-T, Harms H, **Maskow T** (2013) Simple Improvement of the Sensitivity of a Heat Flux Reaction Calorimeter to Monitor Bioprocesses with Weak Heat Production. *Thermochim. Acta* 569: 71-77

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49. Regestein L, **Maskow T**, Track A, Knabben I, Wunderlich M, Lerchner J, Büchs J (2013) Non-invasive Online Detection of Microbial Lysine Formation in Stirred Tank Bioreactors by Using Calorespirometry. *Biotechnology and Bioengineering* 110(5): 1387-1395

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50. Regestein L, Wolf A, Schneider H.-J., **Maskow T**, Mertens F, Büchs J, Lerchner J (2012) A Chip Calorimeter for the Monitoring of Conventional Bioreactors at Elevated Cell Densities. *Thermochimica Acta* 544: 10– 16

51. **Maskow T**, Wolf K, Kunze W, Harms H, Enders S (2012) Rapid Analysis of Bacterial Contaminations in Drinking Water Using Isothermal Calorimetry. *Thermochimica Acta* 543: 273-280

52. Buchholz F, Lerchner J, Mariana F, Kuhlicke U, Neu TR, Harms H, **Maskow T** (2012) Chip-calorimetry Provides Real Time Insights into the Inactivation of Biofilms by Predatory Bacteria. *Biofouling* 28(3): 351– 362

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56. Buchholz F, Harms H, **Maskow T** (2010) Biofilm Research Using Calorimetry – a Marriage Made in Heaven? *Biotechnology Journal* 5 (12), 1339 - 1350

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60. **Maskow T**, Kemp RB, Buchholz F, Schubert T, Kiesel B, Harms H (2010) What Heat is Telling us about Microbial Conversions in Nature and Technology: from Chip- to Megacalorimetry. *Microbial Biotechnology* 3: 269 – 284
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62. Zhou Y, Yao J, He M, Choi M.M.F., Feng L, Chen H, Wang F, Chen K, Zhuang R, **Maskow T**, Wang G, Zaray G (2010) Reduction in Toxicity of Arsenic(III) to *Halobacillus* sp. Y35 by Kaolin and their Related Adsorption Studies. *Journal of Hazardous Materials* 176, 487 -494

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66. Zhou Y, Yao J, Choi MMF, Chen Y, Chen H, Mohammad R, Zhuang R, Chen H, Wang F, **Maskow T**, Zaray G (2009) A combination method to study microbial communities and activities in zinc contaminated soil. *Journal of Hazardous Materials* 169, 875-881
67. Chen H-L, Yao J, Wang L, Wang F, Bramanti E, **Maskow T**, Zaray G (2009) Evaluation of solvent tolerance of microorganisms by microcalorimetry. *Chemosphere* 74, 1407 - 1411

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73. Chen Y, Yao J, Wang F, Zhou Y, Chen H, Gai N, Chen H, Chen K, **Maskow T**, Ceccanti B, Zaray G (2008) Toxic Effect of Inorganic Arsenite [As(III)] on Metabolic Activity of *Bacillus Subtilis* by Combined Methods. *Current Microbiology*, 57, 258 - 263
74. **Maskow T**, Röllich A, Fetzer I, Yao J, Harms H (2008) Observation of non-linear biomass–capacitance correlations: Reasons and implications for bioprocess control. *Biosensors and Bioelectronics* 24, 123–128

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82. Liu J-S, Vojjanovic V, Patiño R, **Maskow T**, von Stockar U (2007) A Comparison of various Gibbs energy dissipation correlations for predicting microbial growth yields. *Thermochimica Acta* 458, 38-46
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84. Lerchner J, **Maskow T**, Wolf G (2007) Chip calorimetry and its use for biochemical and cell biological investigations. *Chemical Engineering and Processing* 47 (6), 991-999
85. Peitzsch M, Kiesel K, Harms H; **Maskow T** (2007) Real time analysis of *Escherichia coli* biofilms using calorimetry. *Chemical Engineering and Processing* 47 (6), 1000-1006
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96. **Maskow T**, Kleinstauber S (2004) Carbon- and energy fluxes during haloadaptation of a Halomonas sp. EF11 growing on phenol. Extremophiles 8, 133-141
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100. **Maskow T**, Babel W (2002) Calorimetric analysis of microorganisms in transient growth states to quantify changes of metabolic fluxes in response to nutrient deficiencies and osmopressure. Thermochemica Acta 382, 229-237
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102. **Maskow T**, Babel W (2001) Calorimetrically Obtained Information about Efficiency of Synthesis of Ectoine from Glucose by Halomonas elongata. Biochemica et Biophysica Acta 1527, 4-10
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104. **Maskow T**, Babel W (1998) Calorimetric Investigations of Bacterial Growth on Phenol - Efficiency and Velocity of Growth as a Function of the Assimilation Pathways. Thermochemica Acta 309, 97-103
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2. Book contributions

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