

Publication list:

1. Peer per-reviewed articles (group members bold)

2021

1. 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* (accepted)
2. 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
3. **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

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4. **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
5. **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
6. **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
7. **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
8. **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
9. **Rohwerder, T.** (2020) New Structural Insights into Bacterial Sulfoacetaldehyde and Taurine Metabolism. *Biochemical Journal.* 477:1367-1371
10. **Rohwerder, T.**, Rohde, M.-T., Jehmlich, R., Purswani, J. (2020) Actinobacterial Degradation of 2Hydroxyisobutyric Acid Proceeds via Acetone and Formyl-CoA by Employing a ThiamineDependent Lyase Reaction. *Frontiers in Microbiology* 11: 691
11. 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
12. 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
13. **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

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14. **Al-Fathi, H.**, Koch, M., Lorenz, W.G., Lechner, U. (2019) Anaerobic degradation of 2,4,5-trichlorophenoxyacetic acid by enrichment cultures from freshwater sediments. *Environmental Science and Pollution Research* 26(33): 34459-34467
15. Kleinstaub, S., **Rohwerder, T.**, Lohse, U., Seiwert, B., Reemtsma, T. (2019) Sated by a ZeroCalorie Sweetener: Wastewater Bacteria Can Feed on Acesulfame. *Frontiers in Microbiology* 10: 2606
16. **Fricke, C.**, Harms, H., **Maskow, T.** (2019) Rapid Calorimetric Detection of Bacterial Contamination: Influence of the Cultivation Technique. *Frontiers in Microbiology* 10: 2530
17. **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
18. Zahn, M., Kurteva-Yaneva, N., Schuster, J., Krug, U., Georgi, T. Müller, R. H., **Rohwerder, T.**, Sträter, N. (2019) Structures of 2-Hydroxyisobutyric Acid-CoA Ligase reveal determinants of substrate specificity and describe a multi-conformational catalytic cycle. *Journal of Molecular Biology* 431: 2747-2761

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19. 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
20. 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): 1556-1566
21. Russel, M., Marios, S., JiaJia, S., Xu, W., Xiao, L., **Maskow, T.**, Alam, M.M., Georgiou, J. (2018) High-Frequency, dielectric spectroscopy for the detection of electrophysiological/biophysical differences in different bacteria types and concentrations. *Analytica Chimica Acta* 1010: 86-95
22. 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
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24. 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
25. Korth, B., **Maskow, T.**, Harnisch, F. (2017) Bioelektrokalorimetrie – der mikrobielle elektrochemische Peltier-Effekt. *Biospektrum* 23(2): 220-221
26. Zhou Z-Q, Yang L-Y, Yan R., Zhao J, Liu Y-Q, Lai L, Jiang F-L, **Maskow T**, Liu Y (2017) Mndoped 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
27. Altwasser V, Pätz R.R., Lemke T, **Paufler S**, **Maskow T** (2017) A simple Method for the Measurement of Metabolic Heat Production Rates 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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28. Korth B, **Maskow T**, Picioareanu 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

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29. **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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31. **Maskow T, Paufler S** (2015) What does calorimetry and thermodynamics of living cells tell us? *Methods* 76: 3-10
32. Przybylski D, Rohwerder T, Dilßner C, **Maskow T**, Harms H, Müller RH (2015) Exploiting mixtures of H₂, CO₂ and O₂ for improved production of methacrylate precursor 2hydroxyisobutyric acid by engineered *Cupriavidus necator* strains. *Applied Microbiology and Biotechnology* 99:2131-2145

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33. Hoffmann P, Held C, **Maskow T**, Sadowski G (2014) A thermodynamic investigation of the glucose-6-phosphate isomerization. *Biophysical Chemistry* 195: 22-31
34. **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
35. **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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36. Hartmann T, Mühlhng M, Wolf A, **Mariana F, Maskow T**, Mertens F, Neu T.R., Lerchner J (2013) A chip-calorimetric approach to the analysis of Ag nanoparticle caused inhibition and inactivation of beads-grown bacterial biofilms. *Journal of Microbiological Methods* 95: 129-137
37. **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
38. **Mariana F, Buchholz F**, Lerchner J, Neu TR, Harms H, **Maskow T** (2013) Chip-Calorimetric Monitoring of Biofilm Eradication with Antibiotics Provides Mechanistic Information. *International Journal of Medical Microbiology* 303: 158– 165
39. Regestein L, **Maskow T**, Track A, Knabben I, Wunderlich M, Lerchner J, Büchs J (2013) Noninvasive Online Detection of Microbial Lysine Formation in Stirred Tank Bioreactors by Using Calorespirometry. *Biotechnology and Bioengineering* 110(5): 1387-1395

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41. **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.
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44. **Maskow T, Schubert T**, Wolf A, **Buchholz F**, Regestein L, Buechs J, Mertens F, Harms H, Lerchner J (2011) Potentials and limitations of miniaturized calorimeters for bioprocess monitoring. *Applied Microbiology and Biotechnology* 92: 55-66
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49. **Maskow T**, Kiesel B, **Schubert T, Yong Z**, Harms H, Yao J (2010) Calorimetric Real Time Monitoring of Lambda Prophage Induction. *Journal of Virological Methods* 168 (1-2), 126-132
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59. Pörtner R, **Maskow T** (2008) Von der Zelle zum Prozess. *Transkript* 12 (2008), 58
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73. **Schubert T**, Breuer U, Harms H, **Maskow T** (2007) Calorimetric bioprocess monitoring by small modifications to a standard bench-scale bioreactor *Journal of Biotechnology* 130, 24-31
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75. **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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81. **Maskow T**, Lerchner J, **Peitzsch M**, Harms H, Wolf G (2006) A miniaturized chip-calorimeter for the monitoring of whole cell biotransformation. *Journal of Biotechnology* **122**, 431-442
82. Von Stockar U, **Maskow T**, Liu J, Marison IW, Patiño R (2006) THERMODYNAMICS OF MICROBIAL GROWTH AND METABOLISM : An Analysis of the Current Situation. *Journal of Biotechnology* **121**, 517-533
83. **Maskow T**, Memmert K (2006) DECHEMA-Arbeitsausschuss "Technik biologischer Prozesse" und VDI-GVC-Fachausschuss "Bioverfahrenstechnik". *Chemie Ingenieur Technik* **78**, 490-491

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2. Book contributions

1. Mariana-Morais F, Buchholz F, **Maskow T** (2014) Chip-calorimetry for evaluation of biofilm treatment with biocides, antibiotics and biological agents. In Gianfranco Donelli (ed.), *Microbial Biofilms: Methods and Protocols*, *Methods in Molecular Biology*, vol. 1147, DOI 10.1007/978-4939-0467-9_19, © Springer Sciences+Business Media New York 2014
2. **Maskow T**, Haynes CA (2013) The Thermodynamics of Electrically Charged Molecules in Solution. In *Biothermodynamics The Role of Thermodynamics in Biochemical Engineering*. von Stockar U (ed). EPFL Press Distributed by CRC Press, pp. 31-61.
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3. Patents

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2. **Maskow T**, Harms H., Torsten S., Mothes G. (2008) Verfahren zur simultanen Produktion von PHA und kompatiblen Soluten in halophilen Bakterien DE 10 2008 045 237
3. Babel W, Kleinsteuber S und **Maskow T**. (2002) Method for the Continuous Biotechnological Production of Compatible Solutes from Toxic Substrates. WO 02/50298 A1
4. **Maskow T**, Babel W und Kleinsteuber S (2000) Verfahren zur kontinuierlichen biotechnologischen Herstellung von kompatiblen Soluten aus toxischen Substraten. DE 100 65 071.6
5. **Maskow T** und Babel W (1998) Verfahren zur kontinuierlichen Herstellung von Polyhydroxybuttersäure "Process for continuous production of poly-3-hydroxybutyric acid" Internationale Patentanmeldung PCT/EP99/02803