

## Publikationen ITC 2020 / Publications ITC 2020

Bergfeldt, B., Reichelt, J., Pfrang-Stotz, G., Kaufmann, S.

A New Method to Predict Slagging and Fouling During Biomass Combustion.

28<sup>th</sup> European Biomass Conference & Exhibition, e-EUBCE 2020, July 6 - 9, 2020, online, Session

2BV.2.9, DOI:10.5071/28thEUBCE2020-2BV.2.9; ISBN: 978-88-89407-20-2, pages: 1012-1015

Bergfeldt, B., Reichelt, J., Pfrang-Stotz, G.

Systematic Investigation of Solid Residues From Three German Biomass Power Plants.

8<sup>th</sup> International Symposium on Energy From Biomass and Waste (Venice 2020), online

Chaussonnet, G., Joshi, S., Wachter, S., Koch, R., Jakobs, T., Kolb, T., Bauer, H.-J.

Air-Assisted Atomization at Constant Mass and Momentum Flow Rate: Investigation into the Ambient Pressure Influence With the Smoothed Particle Hydrodynamics Method.

Journal of engineering for gas turbines and power, Band 142, Heft 3, Seiten 031019,

ISSN: 0742-4795, 1528-8919, DOI: 10.1115/1.4044968

Diabaté, S., Fritsch-Decker, S., Mülhopt, S., Wexler, M., Hauser, M., Baumann, W., Hufnagel, M., Friesen, A., Hartwig, A., Stapf, D., Weiss, C.

Toxicity assessment of pristine and thermally treated carbon fibres.

Naunyn-Schmiedeberg's archives of Pharmacology, Band 393, Heft S1, Seiten S89, P248,

ISSN: 0028-1298, 1432-1912, DOI: 10.1007/s00210-020-01828-y; Abstracts of the 86th Annual

Meeting of the German Society for Experimental and Clinical Pharmacology and Toxicology

(DGPT), March 2 - 5, 2020, Leipzig University, Leipzig

Eberhard, M., Santo, U., Michelfelder, B., Günther, A., Weigand, P., Matthes, P., Hagenmeyer, V., Kolb, T.

The bioliq<sup>®</sup> Entrained-Flow Gasifier - A Model for the German Energiewende.

ChemBioEng reviews, Band 7, Heft 4, Seiten 1-14, ISSN: 2196-9744, DOI: 10.5445/IR/1000120259

Gaedtke, M., Wachter, S., Kunkel, S., Sonnack, S., Rädle, M., Nirschl, H., Krause, M. J.

Numerical study on the application of vacuum insulation panels and a latent heat storage for refrigerated vehicles with a large Eddy lattice Boltzmann method.

Heat and mass transfer, Band 56, Heft 4, Seiten 1189-1201, Springer-Verlag, 2020, ISSN: 0947-7411,

1432-1182, DOI: 10.1007/s00231-019-02753-4; DOI: 10.5445/IR/1000104600

Gehrmann, H.-J., Mätzing, H., Nowak, P., Baris, D., Seifert, H., Dupont, C., Defoort, F., Peyrot, M., Castagno, F.

Waste Wood Characterization and Combustion Behaviour in Pilot Lab Scale.

Journal of the Energy Institute, Band 93, Heft 4, August 2020, Seiten 1634-1641,

<https://doi.org/10.1016/j.joei.2020.02.001>

Graf, F., Sauerschell, S., Prabhakaran, P., Bajohr, S., Slama, J., Stapf, D., Kolb, T.

Sektorenkopplung mit Gas im Rahmen des BMBF-Vorhabens SEKO. Teil 1: Forschungsinfrastruktur EnergyLab 2.0.

Energie-, Wasser-Praxis, Heft 9, Seiten 26-29, ISSN: 0341-0323, 1436-6134, 09/2020

Graf, F., Sauerschell, S., Prabhakaran, P., Bajohr, S., Slama, J., Stapf, D., Kolb, T.

Sektorenkopplung mit Gas im Rahmen des BMBF-Vorhabens SEKO. Teil 2: Gasfachliche Untersuchungsenergie.

Energie-, Wasser-Praxis, Heft 10, Seiten 43-49, ISSN: 0341-0323, 1436-6134, 10/2020

Held, M., Schollenberger, D., Sauerschell, S., Bajohr, S., Kolb, T.  
Power-to-Gas: CO<sub>2</sub> Methanation Concepts for SNG Production at the Engler-Bunte-Institut.  
Chemie - Ingenieur - Technik, Band 92, Heft 5, Seiten 595-602, ISSN: 0009-286X,  
DOI: 10.5445/IR/1000118431

Heneka, M., Köppel, W., Graf, F.  
Vergleichende Bewertung von Power-to-X-Prozessen zur Bereitstellung von Kraftstoffen aus  
erneuerbaren Quellen.  
Energie-, Wasser-Praxis, Heft 3, Seiten 40-46, ISSN: 0341-0323, 1436-6134

Koch, S., Kubach, H., Velji, A., Koch, T., Hagen, F. P., Bockhorn, H., Loukou, A., Trimis, D., Suntz, R.  
Impact of the Injection Strategy on Soot Reactivity and Particle Properties of a GDI Engine.  
WCX SAE World Congress Experience, Detroit, April 21-23, 2020 (Corona-bedingt abgesagt), SAE  
technical papers, 2020-01-0392, DOI: 10.4271/2020-01-0392

Li, J., Zhang, W., Garbev, K., Beuchle, G., Monteiro, P. J. M.  
Influences of cross-linking and Al incorporation on the intrinsic mechanical properties of tobermorite.  
Cement and Concrete Research, Heft 136, 2020, 106170, Elsevier,  
<https://doi.org/10.1016/j.cemconres.2020.106170>, ISSN: 0008-8846

Mielke, K., Kolb, T., Müller, M.  
Chemical fractionation of inorganic constituents in entrained flow gasification of slurry from straw  
pyrolysis.  
Biomass and bioenergy, ISSN: 0961-9534, Band 141, Seiten 105732,  
DOI: 10.1016/j.biombioe.2020.105732, Seiten 105732

Mülhopt, S., Schlager, C., Berger, M., Murugadoss, S., Hoet, P. H., Krebs, T., Paur, H.-R., Stapf, D.  
A novel TEM grid sampler for airborne particles to measure the cell culture surface dose.  
Scientific reports, Band 10, Heft 1, Art.-Nr. 8401, DOI: 10.5445/IR/1000123728,  
ISSN: 2045-2322

Nestler, F., Schütze, A. R., Ouda, M., Hadrich, M. J., Schaadt, A., Bajohr, S., Kolb, T.  
Kinetic modelling of methanol synthesis over commercial catalysts: A critical assessment [in press].  
The chemical engineering journal, 03.2020, ISSN: 1385-8947, DOI: 10.1016/j.cej.2020.124881,  
Band 394, Seiten 1 - 13

Reichelt, J., Pfrang-Stotz, G., Bergfeldt, B.  
Increasing the Efficiency of Energy Production in Biomass Power Plants by Technical Application of a  
Biofuel Catalog: First Test Results.  
28<sup>th</sup> European Biomass Conference & Exhibition, e-EUBCE 2020, July 6 - 9, 2020, online, Session  
2BV.2.8, DOI:10.5071/28thEUBCE2020-2BV.2.8; ISBN: 978-88-89407-20-2, pages: 345 - 349

Reichelt, J., Pfrang-Stotz, G., Bergfeldt, B., Ricker, M.  
Small Scale-Simulation of Mineral Reactions During the Formation of Slags in the Combustion Chamber  
of Biomass Heat and Power Plants.  
8<sup>th</sup> International Symposium on Energy From Biomass and Waste (Venice 2020), online

Rincón Prat, S., Schneider, C., Kolb, T.  
Determination of active sites during gasification of biomass char with CO<sub>2</sub> using temperature-  
programmed desorption. Part 2: Influence of ash components.  
Fuel, Band 267, Article No. 117179, vorab online veröffentlicht am 11.02.20, ISSN: 0016-2361,  
DOI: 10.1016/j.fuel.2020.117179

Schneider, S., Bajohr, S., Graf, F., Kolb, T.  
State of the Art of Hydrogen Production via Pyrolysis of Natural Gas (Verfahrensübersicht zur Erzeugung von Wasserstoff durch Erdgas-Pyrolyse).  
Chemie - Ingenieur - Technik, Band 92, Heft 8, Seiten 1023-1032, ISSN: 0009-286X,  
DOI: 10.1002/cite.202000021

Schneider, S., Bajohr, S., Graf, F., Kolb, T.  
State of the Art of Hydrogen Production via Pyrolysis of Natural Gas.  
ChemBioEng reviews, Band 7, Heft 5, Seiten 150-158, ISSN: 2196-9744, DOI: 10.5445/IR/1000122897

Soria-Verdugo, A., Morgano, M. T., Mätzing, H., Goos, E., Leibold, H., Merz, D., Riedel, U., Stapf, D.  
Comparison of wood pyrolysis kinetic data derived from thermogravimetric experiments by model-fitting and model-free methods.  
Energy conversion and management, Band 212, Article Nr. 112818, ISSN: 0196-8904, 1879-2227  
DOI: 10.1016/j.enconman.2020.112818

Stapf, D., Ciceri, G., Johansson, I.  
Trends and drivers in alternative thermal conversion of waste.  
IEA Bioenergy Report, online: <http://task36.ieabioenergy.com/news/released-new-task-report-trends-and-drivers-in-alternative-thermal-conversion-of-waste/>  
DOI: 10.5445/IR/1000124179

Stapf, D., Netsch, N., Richter, F., Yogish, S. P., Zeller, M.  
Chemisches Recycling kunststoffhaltiger Abfälle - Das Potenzial der Pyrolyse.  
10. ProcessNet-Jahrestagung und 34. DECHEMA-Jahrestagung der Biotechnologen 2020, Processes for Future, 21. - 24. September 2020, Aachen, Chemie Ingenieur Technik, Band 92, Heft 9, ISSN: 0009-286X, E-ISSN: 1552-2640, DOI: 10.1002/cite.202055383, Seite 1260

Stapf, D.  
Technical Assessment of Combined Mechanical and Chemical Recycling.  
Dialog Forum Chemical Recycling: Life cycle analysis on energy requirements, CO<sub>2</sub> emissions and the sustainability of ChemCycling™, Virtual Dialog, October 13, 2020,  
DOI: 10.5445/IR/1000124804;  
<https://www.basf.com/global/en/who-we-are/sustainability/we-drive-sustainable-solutions/circular-economy/mass-balance-approach/chemcycling/dialog-forum-chemical-recycling.html>

Stösser, P.  
Investigation of solid-phase processes during the conversion of biogenic slurry in entrained-flow gasifiers.  
Verlag Dr. Hut, München, ISBN: 978-3-8439-4384-0, 225 Seiten, Dissertation

Stemmermann, P., Garbev, K., Gasharova, B., Beuchle, G., Haist, M., Divoux, T.  
Chemo-mechanical characterization of hydrated calcium-hydrosilicates with coupled Raman- and nanoindentation measurements.  
Applied geochemistry, Band 118, Seiten 104582, ISSN: 0883-2927,  
DOI: 10.1016/j.apgeochem.2020.104582

Wachter, S., Jakobs, T., Kolb, T.  
Experimental investigation of the influence of system pressure on resulting spray quality and jet breakup applying pressure adapted twin-fluid nozzles.  
International journal of multiphase flow, Band 125, Article no: 103189, ISSN: 0301-9322,  
DOI: 10.1016/j.ijmultiphaseflow.2019.103189, E04/2020

Wachter, S., Jakobs, T., Kolb, T.

Effect of Solid Particles on Droplet Size Applying the Time-Shift Method for Spray Investigation.  
Applied Sciences, Band 10, Heft 21, ISSN: 2076-3417, DOI: 10.3390/app10217615

Zhang, F., Zirwes, T., Müller, T., Wachter, S., Jakobs, T., Habisreuther, P., Zarzalis, N., Trimis, D., Kolb, T.

Effect of elevated pressure on air-assisted primary atomization of coaxial liquid jets : Basic research for entrained flow gasification.

Renewable & Sustainable energy reviews, Band 134, Article no: 110411, ISSN: 1364-0321, 12/2020,  
DOI: 10.1016/j.rser.2020.110411

Zhang, M., Vogelbacher, M., Aleksandrov, K., Gehrman, H.-J., Matthes, J.

Analyse des Flug- und Abbrandverhaltens von Ersatzbrennstoffen auf Basis eines Lichtfeldkamera-systems.

Forum Bildverarbeitung (2020), Online, 26.11.2020 - 27.11.2020, in: Forum Bildverarbeitung 2020.

Hrsg.: T. Längle, KIT Scientific Publishing, Seiten 105 - 117, DOI: 10.5445/KSP/1000124383