



OTTO VON GUERICKE  
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VST

FAKULTÄT FÜR VERFAHRENS-  
UND SYSTEMTECHNIK

# Publikationsbericht 2017

Institut für Verfahrenstechnik

# INSTITUT FÜR VERFAHRENSTECHNIK

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## 1. Leitung

Prof. Dr.-Ing. Udo Reichl (geschäftsführender Leiter)  
Prof. Dr.-Ing. habil. Dr.h.c. Andreas Seidel-Morgenstern  
Prof. Dr.-Ing. habil. Martin Sommerfeld  
Prof. Dr.-Ing. habil. Kai Sundmacher  
Prof. Dr.-Ing. habil. Evangelos Tsotsas  
Prof. Dr. Ir. Berend van Wachem  
Hon.-Prof. Dr.-Ing. Mirko Peglow  
Jun.-Prof. Dr.-Ing. Andreas Bück  
Dr. Andreas Voigt  
Dipl.-Phys. Diethard Kürschner

## 2. Veröffentlichungen

### Begutachtete Zeitschriftenaufsätze

#### **Alvarado Perea, L.; Wolff, T.; Hamel, C.; Seidel-Morgenstern, Andreas**

Experimental study of the deactivation of Ni/AlMCM-41 catalyst in the direct conversion of ethene to propene  
In: Applied catalysis / A: an international journal devoted to catalytic science and its applications - Amsterdam [u.a.]: Elsevier Science, Bd. 533.2017, S. 121-131  
[Imp.fact.: 4,012]

#### **Alvarado Perea, Leo; Felischak, Matthias; Wolff, Tanya; Hamel, Christof; Seidel-Morgenstern, Andreas**

Experimental investigation of the reaction network of ethene to propene over Ni/AlMCM-41 catalysts  
In: Chemie - Ingenieur - Technik: CIT - Weinheim: Wiley-VCH Verl, Bd. 89.2017, 7, S. 903-914  
[Dedicated to Prof. Dr. Wilhelm Schwieger on the occasion of his 65th birthday]  
[Imp.fact.: 0,877]

#### **Aman, Sergej; Aman, Alexander; Hintz, Werner; Trüe, Michael; Veit, Peter; Hirsch, Sören**

The exfoliation of graphite particles in the vibratory disk mill  
In: Chemie - Ingenieur - Technik: CIT - Weinheim: Wiley-VCH Verl, Bd. 89.2017, 9, S. 1185-1191  
[Imp.fact.: 0,877]

#### **Aydin, Erdal; Bonvin, Dominique; Sundmacher, Kai**

Dynamic optimization of constrained semi-batch processes using Pontryagins minimum principle - an effective quasi-Newton approach  
In: Computers & chemical engineering: an international journal of computer applications in chemical engineering - Amsterdam [u.a.]: Elsevier Science, Bd. 99.2017, S. 135-144  
[Imp.fact.: 2,581]

#### **Bachmann, Philipp; Bück, Andreas; Tsotsas, Evangelos**

Experimental investigation and correlation of the Bodenstein number in horizontal fluidized beds with internal baffles

In: Powder technology: an international journal on the science and technology of wet and dry particulate systems  
- Amsterdam [u.a.]: Elsevier Science, Bd. 308.2017, S. 378-387  
[Imp.fact.: 2,759]

**Bashir, Seemab; Qamar, Shamsul; Perveen, Sadia; Seidel-Morgenstern, Andreas**

Analysis of linear reactive general rate model of liquid chromatography considering irreversible and reversible reactions  
In: Chemical engineering research and design: CERD - Amsterdam: Elsevier, Bd. 119.2017, S. 140-159  
[Imp.fact.: 2,525]

**Börner, Matthias; Bück, Andreas; Tsotsas, Evangelos**

DEM-CFD investigation of particle residence time distribution in top-spray fluidised bed granulation  
In: Chemical engineering science - Amsterdam [u.a.]: Elsevier Science, Bd. 161.2017, S. 187-197  
[Imp.fact.: 1,073]

**Bremer, Jens; Goyal, Pawan; Feng, Lihong; Benner, Peter; Sundmacher, Kai**

POD-DEIM for efficient reduction of a dynamic 2D catalytic reactor model  
In: Computers & chemical engineering: an international journal of computer applications in chemical engineering  
- Amsterdam [u.a.]: Elsevier Science, Bd. 106.2017, S. 777-784  
[Imp.fact.: 3,024]

**Bremer, Jens; Rätze, Karsten H. G.; Sundmacher, Kai**

CO 2 methanation - optimal start-up control of a fixed-bed reactor for power-to-gas applications  
In: AIChE journal - Hoboken, NJ: Wiley, Bd. 63.2017, 1, S. 23-31  
[Imp.fact.: 2,980]

**Buchholz, Hannes; Seidel-Morgenstern, Andreas; Lorenz, Heike**

A contribution to the solution thermodynamics of chiral lactide  
In: Chemical engineering & technology: industrial chemistry, plant equipment, process engineering, biotechnology  
- Weinheim: Wiley-VCH Verl.-Ges, Bd. 40.2017, 7, S. 1268-1275  
[Imp.fact.: 2,051]

**Chen, Kaicheng; Bachmann, Philipp; Bück, Andreas; Jacob, Michael; Tsotsas, Evangelos**

Experimental study and modeling of particle drying in a continuously-operated horizontal fluidized bed  
In: Particuology - Amsterdam: Elsevier, Bd. 34.2017, S. 134-146  
[Imp.fact.: 2,621]

**Eisenschmidt, Holger; Soumaya, M.; Bajcinca, N.; Le Borne, S.; Sundmacher, Kai**

Estimation of aggregation kernels based on Laurent polynomial approximation  
In: Computers & chemical engineering: an international journal of computer applications in chemical engineering  
- Amsterdam [u.a.]: Elsevier Science, Bd. 103.2017, S. 210-217  
[Imp.fact.: 2,581]

**El Sibai, Ali; Rihko Struckmann, Liisa K.; Sundmacher, Kai**

Model-based optimal sabatier reactor design for power-to-gas applications  
In: Energy technology: generation, conversion, storage, distribution - Weinheim [u.a.]: Wiley-VCH, Bd. 5.2017, 6, S. 911-921  
[Special Issue: Carbon Dioxide Utilization]  
[Imp.fact.: 2,789]

**Fachet, Melanie; Flassig, Robert J.; Rihko-Struckmann, Liisa K.; Sundmacher, Kai**

Carotenoid production process using green microalgae of the dunaliella genus - model-based analysis of interspecies variability  
In: Industrial & engineering chemistry research - Columbus, Ohio: American Chemical Society, 2017; <http://dx.doi.org/10.1021/acs.iecr.7b01423>  
[Imp.fact.: 2,930]

**Farid, Muhammad Usman; Bück, Andreas; Heineken, Wolfram; Gohla, Matthias; Zobel, Nico**

Study on nozzle design for combustion of solid materials with low melting points

In: Applied thermal engineering: design, processes, equipment, economics - Amsterdam [u.a.]: Elsevier Science, Bd.

115.2017, S. 832-859

[Imp.fact.: 3,043]

**Fischer, Christian; Jaskulski, Maciej; Tsotsas, Evangelos**

Inline method of droplet and particle size distribution analysis in dilute disperse systems

In: Advanced powder technology: the international journal of the Society of Powder Technology, Japan - Amsterdam [u.a.]: Elsevier, Bd. 28.2017, 11, S. 2820-2829

[Imp.fact.: 2,659]

**Gaide, T.; Jörke, Andreas; Schlipkötter, K. E.; Hamel, Christof; Seidel-Morgenstern, Andreas; Behr, A.; Vorholt, A. J.**

Isomerization/hydroformylation tandem reaction of a decene isomeric mixture with subsequent catalyst recycling in thermomorphic solvent systems

In: Applied catalysis / A: an international journal devoted to catalytic science and its applications - Amsterdam [u.a.]: Elsevier Science, Bd. 532.2017, S. 50-56

[Imp.fact.: 4,012]

**Gerlach, Martin; Abdul Wajid, D.; Hilfert, Liane; Edelmann, Frank T.; Seidel-Morgenstern, Andreas; Hamel, Christof**

Impact of minor amounts of hydroperoxides on rhodium-catalyzed hydroformylation of long-chain olefins

In: Catalysis science & technology: a multidisciplinary journal focussing on all fundamental science and technological aspects of catalysis - London: RSC Publ, 7, S. 1465-1469, 2017

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**Geyyer, Rostyslav; Dürr, Robert; Temmel, Erik; Li, Tao; Lorenz, Heike; Palis, Stefan; Seidel-Morgenstern, Andreas; Kienle, Achim**

Control of continuous mixed-solution mixed-product removal crystallization processes

In: Chemical engineering & technology: industrial chemistry, plant equipment, process engineering, biotechnology - Weinheim: Wiley-VCH Verl.-Ges, Bd. 40.2017, 7, S. 1362-1369

[Special issue: Industrial crystallization]

**Hämmerlein, Frank; Pieler, Michael M.; Hennig, René; Serve, Anja; Rapp, Erdmann; Wolff, Michael W.; Reichl, Udo; Hubbuch, Jürgen**

Influence of the production system on the surface properties of influenza A virus particles

In: Engineering in life sciences - Weinheim: Wiley-VCH, Bd. 17.2017, 10, S. 1071-1077

[Imp.fact.: 1,698]

**Heyer, Robert; Schallert, Kay; Zoun, Roman; Becher, Beatrice; Saake, Gunter; Benndorf, Dirk**

Challenges and perspectives of metaproteomic data analysis

In: Journal of biotechnology - Amsterdam [u.a.]: Elsevier Science, Bd. 261.2017, S. 24-36

[Imp.fact.: 2,599]

**Hiep, Le Kieu; Kharaghani, Abdolreza; Kirsch, Christoph; Tsotsas, Evangelos**

Discrete pore network modeling of superheated steam drying

In: Drying technology: an international journal - Philadelphia, Pa: Taylor & Francis, Bd. 35.2017, 13, S. 1584-1601

[Imp.fact.: 1,856]

**Hofmann, S.; Bajcinca, N.; Raisch, J.; Sundmacher, Kai**

Optimal control of univariate and multivariate population balance systems involving external fines removal

In: Chemical engineering science - Amsterdam [u.a.]: Elsevier Science, Bd. 168.2017, S. 101-123

[Imp.fact.: 2,895]

**Holze, Susann; Krüger, Benjamin; Hoffmann, Torsten; Bück, Andreas; Schwidder, Michael**

Influence of TiO<sub>2</sub>-layer thickness of spray-coated glass beads on their photocatalytic performance

In: Chemical engineering & technology: industrial chemistry, plant equipment, process engineering, biotechnology  
- Weinheim: Wiley-VCH Verl.-Ges, 2017; <http://dx.doi.org/10.1002/ceat.201600432>  
[Imp.fact.: 2,385]

**Idakiev, Vesselin V.; Graner, Sebastian; Bück, Andreas; Tsotsas, Evangelos; Mörl, Lothar**

Wärmeübergangsuntersuchung in einer induktiv beheizten Wirbelschicht mit heterogener Schichtzusammensetzung  
In: Chemie - Ingenieur - Technik: CIT - Weinheim: Wiley-VCH Verl, Bd. 89.2017, 6, S. 772-784  
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**Idakiev, Vesselin V.; Lazarova, Pavleta V.; Bück, Andreas; Tsotsas, Evangelos; Mörl, Lothar**

Inductive heating of fluidized beds - drying of particulate solids  
In: Powder technology: an international journal on the science and technology of wet and dry particulate systems  
- Amsterdam [u.a.]: Elsevier Science, Bd. 306.2017, S. 26-33  
[Imp.fact.: 2,759]

**Janiga, Gábor; Stucht, Daniel; Bordás, Róbert; Temmel, Erik; Seidel-Morgenstern, Andreas; Thévenin, Dominique; Speck, Oliver**

Noninvasive 4D flow characterization in a stirred tank via phase-contrast magnetic resonance imaging  
In: Chemical engineering & technology: industrial chemistry, plant equipment, process engineering, biotechnology  
- Weinheim: Wiley-VCH Verl.-Ges, Bd. 40.2017, 7, S. 1370-1327  
[Imp.fact.: 2,051]

**Jaskulski, Maciej; Atuonwu, James C.; Tran, Thi Thu Hang; Stapley, Andrew G. F.; Tsotsas, Evangelos**

Predictive CFD modeling of whey protein denaturation in skim milk spray drying powder production  
In: Advanced powder technology: the international journal of the Society of Powder Technology, Japan - Amsterdam [u.a.]: Elsevier, Bd. 28.2017, 12, S. 3140-3147

**Jiang, Zhaochen; Hagemeier, Thomas; Bück, Andreas; Tsotsas, Evangelos**

Experimental measurements of particle collision dynamics in a pseudo-2D gas-solid fluidized bed  
In: Chemical engineering science - Amsterdam [u.a.]: Elsevier Science, Bd. 167.2017, S. 297-316  
[Imp.fact.: 2,750]

**Jokiel, Michael; Wagner, Lisa-Maria; Mansour, Michael; Kaiser, Nicolas Maximilian; Zähringer, Katharina; Janiga, Gábor; Nigam, Krishna D. P.; Thévenin, Dominique; Sundmacher, Kai**

Measurement and simulation of mass transfer and backmixing behavior in a gas-liquid helically coiled tubular reactor  
In: Chemical engineering science - Amsterdam [u.a.]: Elsevier Science, Bd. 170.2017, S. 410-421

**Jörke, Andreas; Gaide, Tom; Behr, Arno; Vorholt, Andreas; Seidel-Morgenstern, Andreas; Hamel, Christof**

Hydroformylation and tandem isomerization-hydroformylation of n-decenes using a rhodium-BiPhePhos catalyst  
- kinetic modeling, reaction network analysis and optimal reaction control  
In: The chemical engineering journal - Amsterdam: Elsevier, Bd. 313.2017, S. 382-397  
[Imp.fact.: 5,310]

**Jörke, Andreas; Seidel-Morgenstern, Andreas; Hamel, Christof**

Rhodium-BiPhePhos catalyzed hydroformylation studied by operando FTIR spectroscopy - catalyst activation and rate determining step  
In: Journal of molecular catalysis / A - Amsterdam [u.a.]: Elsevier Science, Vol. 426.2017, Part A, S. 10-14

**Kaiser, Nicolas M.; Jokiel, Michael; McBride, Kevin; Flassig, Robert J.; Sundmacher, Kai**

Optimal reactor design via flux profile analysis for an integrated hydroformylation process  
In: Industrial & engineering chemistry research - Columbus, Ohio: American Chemical Society, Bd. 56.2017, 40, S. 11507-11518  
[Imp.fact.: 2,930]

**Kerst, Kristin; Roloff, Christoph; Medeiros de Souza, Luís G.; Bartz, Antje; Seidel-Morgenstern, Andreas; Thévenin, Dominique; Janiga, Gábor**

CFD-DEM simulations of a fluidized bed crystallizer

In: Chemical engineering science - Amsterdam [u.a.]: Elsevier Science, Bd. 165.2017, S. 1-13

[Imp.fact.: 2,750]

**Kohrs, Fabian; Heyer, Robert; Bissinger, Thomas; Kottler, Robert; Schallert, Kay; Püttker, Sebastian; Behne, A.; Rapp, Erdmann; Benndorf, Dirk; Reichl, Udo**

Prototyping of laboratory-scale biogas plants reveals multiple steady-states in community composition

In: Anaerobe: the official journal of the Anaerobe Society of the Americas - London: Academic Press, Bd. 46.2017, S. 56-68

[Imp.fact.: 2,278]

**Kovačević, Tijana; Wiedmeyer, Viktoria; Schock, Jonathan; Voigt, Andreas; Pfeiffer, Franz; Sundmacher, Kai; Briesen, Heiko**

Disorientation angle distribution of primary particles in potash alum aggregates

In: Journal of crystal growth - Amsterdam [u.a.]: Elsevier, Bd. 467.2017, S. 93-106

[Imp.fact.: 1,462]

**Lemberg, Max; Sadowski, Gabriele; Gerlach, Martin; Kohls, Emilia; Stein, Matthias; Hamel, Christof; Seidel-Morgenstern, Andreas**

Predicting solvent effects on the 1-dodecene hydroformylation reaction equilibrium

In: AIChE journal - Hoboken, NJ: Wiley, Bd. 63.2017, 10, S. 4576-4585

[Imp.fact.: 2,980]

**Li, Tao; Lorenz, Heike; Seidel-Morgenstern, Andreas**

Solubility study and thermal stability analysis of calcium propionate

In: Chemical engineering & technology: industrial chemistry, plant equipment, process engineering, biotechnology - Weinheim: Wiley-VCH Verl.-Ges, Bd. 40.2017, 7, S. 1221-1230

[Imp.fact.: 2,051]

**Mader-Arndt, Katja; Aman, Sergej; Fuchs, Regina; Tomas, Jürgen**

Contact properties determination of macroscopic fine disperse glass particles via compression tests in normal direction

In: Advanced powder technology: the international journal of the Society of Powder Technology, Japan - Amsterdam

[u.a.]: Elsevier, Bd. 28.2017, 1, S. 101-114

[Imp.fact.: 2,659]

**Mader-Arndt, Katja; Aman, Sergej; Fuchs, Regina; Tomas, Jürgen**

Contact properties determination of macroscopic fine disperse glass particles via compression tests under cyclic loading/unloading

In: Advanced powder technology: the international journal of the Society of Powder Technology, Japan - Amsterdam

[u.a.]: Elsevier, Bd. 28.2017, 3, S. 687-696

[Imp.fact.: 2,659]

**Mangold, Michael; Khlopov, Dmytro; Temmel, Erik; Lorenz, Heike; Seidel-Morgenstern, Andreas**

Modelling geometrical and fluid-dynamic aspects of a continuous fluidized bed crystallizer for separation of enantiomers

In: Chemical engineering science - Amsterdam [u.a.]: Elsevier Science, Bd. 160.2017, S. 281-290

[Imp.fact.: 2,750]

**Mann, Hannes; Roloff, Christoph; Hagemeier, Thomas; Thévenin, Dominique; Tomas, Jürgen**

Model-based experimental data evaluation of separation efficiency of multistage coarse particle classification in a zigzag apparatus

In: Powder technology: an international journal on the science and technology of wet and dry particulate systems

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[Imp.fact.: 2,759]

**Mansour, M.; Liu, Z.; Janiga, Gabor; Nigam, K. D. P.; Sundmacher, Kai; Thévenin, Dominique; Zähringer, Katharina**  
Numerical study of liquid-liquid mixing in helical pipes

In: Chemical engineering science - Amsterdam [u.a.]: Elsevier Science, Bd. 172.2017, S. 250-261  
[Imp.fact.: 2,750]

**Marichal-Gallardo, Pavel; Pieler, Michael M.; Wolff, Michael W.; Reichl, Udo**

Steric exclusion chromatography for purification of cell culture-derived influenza A virus using regenerated cellulose membranes and polyethylene glycol

In: Journal of chromatography / A: including electrophoresis, mass spectrometry and other separation and detection methods - New York, NY [u.a.]: Science Direct, Bd. 1483.2017, S. 110-119  
[Imp.fact.: 3,926]

**McBride, Kevin; Kaiser, Nicolas Maximilian; Sundmacher, Kai**

Integrated reaction-extraction process for the hydroformylation of long-chain alkenes with a homogeneous catalyst

In: Computers & chemical engineering: an international journal of computer applications in chemical engineering - Amsterdam [u.a.]: Elsevier Science, Bd. 105.2017, S. 212-223  
[Imp.fact.: 3,024]

**Meyer, Katja; Bück, Andreas; Tsotsas, Evangelos**

Determination of particle exchange rates at over-flow weirs in horizontal fluidised beds by particle tracking velocimetry

In: Particuology - Amsterdam: Elsevier, Bd. 32.2017, S. 1-9  
[Imp.fact.: 2,280]

**Moghaddam, Alireza Attari; Kharaghani, Abdolreza; Tsotsas, Evangelos; Prat, Marc**

Kinematics in a slowly drying porous medium - reconciliation of pore network simulations and continuum modeling

In: Physics of fluids: devoted to the publication of original theoretical, computational, and experimental contributions to the dynamics of gases, liquids, and complex or multiphase fluids - [S.I.]: American Institute of Physics, Vol. 29.2017, 2, Art. 022102  
[Imp.fact.: 2,017]

**Neugebauer, Christoph; Palis, Stefan; Bück, Andreas; Tsotsas, Evangelos; Heinrich, Stefan; Kienle, Achim**

A dynamic two-zone model of continuous fluidized bed layering granulation with internal product classification

In: Particuology - Amsterdam: Elsevier, Bd. 31.2017, S. 8-14  
[Imp.fact.: 2,280]

**Peña Arias, Ivonne Karina; Sundmacher, Kai; Hanke-Rauschenbach, Richard**

Influence of the autonomous oscillations and the CO concentration on the performance of an ECPrOx reactor

In: Electrochimica acta: the journal of the International Society of Electrochemistry (ISE) - New York, NY [u.a.]: Elsevier, Bd. 251.2017, S. 602-612  
[Imp.fact.: 4,798]

**Peña Arias, Ivonne Karina; Trinke, Patrick; Hanke-Rauschenbach, Richard; Sundmacher, Kai**

Understanding PEM fuel cell dynamics - the reversal curve

In: International journal of hydrogen energy: official journal of the International Association for Hydrogen Energy - New York, NY [u.a.]: Elsevier, Bd. 42.2017, 24, S. 15818-15827  
[Imp.fact.: 3,582]

**Pieler, Michael Martin; Heyse, Anja; Wolff, Michael Werner; Reichl, Udo**

Specific ion effects on the particle size distributions of cell culturederived influenza A virus particles within the Hofmeister series

In: Engineering in life sciences - Weinheim: Wiley-VCH, Bd. 17.2017, 5, S. 470-478  
[Imp.fact.: 1,698]

**Pischel, Dennis; Sundmacher, Kai; Flassig, Robert J.**

Efficient simulation of intrinsic, extrinsic and external noise in biochemical systems

In: Bioinformatics - Oxford: Oxford Univ. Press, Vol. 33.2017, 14, S. i319-i324

[Imp.fact.: 7,307]

**Pralow, Alexander; Hoffmann, Marcus; Nguyen-Khuong, Terry; Rapp, Erdmann; Reichl, Udo**

Improvement of the glycoproteomic toolbox with the discovery of a unique C-terminal cleavage specificity of flavastacin for N-glycosylated asparagine

In: Scientific reports - [London]: Macmillan Publishers Limited, part of Springer Nature, Bd. 7.2017, Art.-Nr. 11419, insgesamt 9 Seiten

[Imp.fact.: 4,259]

**Qamar, Shamsul; Bibi, Sameena; Akaram, Noreen; Seidel-Morgenstern, Andreas**

Analysis of two-component non-equilibrium model of linear reactive chromatography

In: Chromatographia: an international journal for rapid communication in chromatography and related techniques - Wiesbaden: Vieweg, Bd. 80.2017, 3, S. 383-400

[Imp.fact.: 1,402]

**Qamar, Shamsul; Sattar, Fouzia Abdul; Batool, Iqra; Seidel-Morgenstern, Andreas**

Theoretical analysis of the influence of forced and inherent temperature fluctuations in an adiabatic chromatographic column

In: Chemical engineering science - Amsterdam [u.a.]: Elsevier Science, Bd. 161.2017, S. 249-264

[Imp.fact.: 1,073]

**Qamar, Shamsul; Uche, David U.; Khan, Farman U.; Seidel-Morgenstern, Andreas**

Analysis of linear two-dimensional general rate model for chromatographic columns of cylindrical geometry

In: Journal of chromatography / A: including electrophoresis, mass spectrometry and other separation and detection methods - New York, NY [u.a.]: Science Direct, Bd. 1496.2017, S. 92-104

[Imp.fact.: 3,981]

**Rekis, Toms; Brzisz, Agris; Orola, Liina; Holzbauer, Tamás; Actiš, Andris; Seidel-Morgenstern, Andreas; Lorenz, Heike**

Single enantiomers urge to crystallize in centrosymmetric space groups - solid solutions of phenylpiracetam

In: Crystal growth & design - Washington, DC: ACS Publ, Bd. 17.2017, 3, S. 1411-1418

[Imp.fact.: 4,055]

**Rihko-Struckmann, Liisa K.; Molnar, Mark; Pirwitz, Kristin; Fachet, Melanie; McBride, Kevin; Zinser, Alexander; Sundmacher, Kai**

Recovery and separation of carbohydrate derivatives from the lipid extracted alga dunaliella by mild liquefaction

In: ACS sustainable chemistry & engineering - Washington, DC: ACS Publ, Bd. 5.2017, 1, S. 588-595

[Imp.fact.: 5,267]

**Schmidt, Marius; Bück, Andreas; Tsotsas, Evangelos**

Experimental investigation of the influence of drying conditions on process stability of continuous spray fluidized bed layering granulation with external product separation

In: Powder technology: an international journal on the science and technology of wet and dry particulate systems - Amsterdam [u.a.]: Elsevier Science, Bd. 320.2017, S. 474-482

[Imp.fact.: 2,942]

**Schmidt, Martin; Bück, Andreas; Tsotsas, Evangelos**

Shell porosity in spray fluidized bed coating with suspensions

In: Advanced powder technology: the international journal of the Society of Powder Technology, Japan - Amsterdam [u.a.]: Elsevier, Bd. 28.2017, 11, S. 2921-2928

[Imp.fact.: 2,659]

**Seidel, Carsten; Jörke, A.; Vollbrecht, B.; Seidel-Morgenstern, Andreas; Kienle, Achim**

**Kinetic modeling of methanol synthesis from renewable resources**

In: Chemical engineering science - Amsterdam [u.a.]: Elsevier Science, Bd. 175.2018, S. 130-138, 2017

[Online first]

[Imp.fact.: 2,895]

**Shamaei, Samira; Seifiedlou, Seyed Sadgeh; Aghbashlo, Mortaza; Tsotsas, Evangelos; Kharaghani, Abdolreza**

Microencapsulation of walnut oil by spray drying - effects of wall material and drying conditions on physicochemical properties of microcapsules

In: Innovative food science & emerging technologies: the official journal of the European Federation of Food Science and Technology - New York, NY [u.a.]: Elsevier Science, Bd. 39.2017, S. 101-112

[Imp.fact.: 2,997]

**Song, Zhen; Zhou, Teng; Qi, Zhiwen; Sundmacher, Kai**

Systematic method for screening ionic liquids as extraction solvents exemplified by an extractive desulfurization process

In: ACS sustainable chemistry & engineering - Washington, DC: ACS Publ, Bd. 5.2017, 4, S. 3382-3389

[Imp.fact.: 5,267]

**Sorrentino, Antonio; Vidakovic-Koch, Tanja; Hanke-Rauschenbach, Richard; Sundmacher, Kai**

Concentration-alternating frequency response - a new method for studying polymer electrolyte membrane fuel cell dynamics

In: Electrochimica acta: the journal of the International Society of Electrochemistry (ISE) - New York, NY [u.a.]: Elsevier, Bd. 243.2017, S. 53-64

[Imp.fact.: 4,803]

**Tada, Érika Fernanda Rezentes; Bück, Andreas; Casciatori, Fernanda; Tsotsas, Evangelos; Thoméo, João Cláudio**

Investigation of heat transfer in partially filled horizontal drums

In: The chemical engineering journal - Amsterdam: Elsevier, Bd. 316.2017, S. 988-1003

[Imp.fact.: 5,310]

**Tapia, Felipe; Jordan, Ingo; Genzel, Yvonne; Reichl, Udo**

Efficient and stable production of Modified Vaccinia Ankara virus in two-stage semi-continuous and in continuous stirred tank cultivation systems

In: PLoS one - Lawrence, Kan: PLoS, Bd. 12.2017, 8, Art.-Nr. e0182553, insges. 17 Seiten

[Imp.fact.: 2,806]

**Tran, Thi Thu Hang; Jaskulski, Maciej; Avila-Acevedo, Juan G.; Tsotsas, Evangelos**

Model parameters for single-droplet drying of skim milk and its constituents at moderate and elevated temperatures

In: Drying technology: an international journal - Philadelphia, Pa: Taylor & Francis, Bd. 35.2017, 4, S. 444-464

[Imp.fact.: 1,856]

**Tran, Thi Thu Hang; Jaskulski, Maciej; Tsotsas, Evangelos**

Reduction of a model for single droplet drying and application to CFD of skim milk spray drying

In: Drying technology: an international journal - Philadelphia, Pa: Taylor & Francis, Bd. 35.2017, 13, S. 1571-1583

[Imp.fact.: 1,856]

**Wenzel, Marcus; Aditya Dharanipragada, N. V. R.; Galvita, Vladimir V.; Poelman, Hilde; Marin, Guy B.; Rihko-Struckmann, Liisa; Sundmacher, Kai**

CO production from CO<sub>2</sub> via reverse water-gas shift reaction performed in a chemical looping mode - Kinetics on modified iron oxide

In: Journal of CO<sub>2</sub> utilization - Amsterdam [u.a.]: Elsevier, Bd. 17.2017, S. 60-68

[Imp.fact.: 4,764]

**Wenzel, Marcus; Rihko-Struckmann, Liisa; Sundmacher, Kai**

Thermodynamic analysis and optimization of RWGS processes for solar syngas production from CO<sub>2</sub>

In: AIChE journal - Hoboken, NJ: Wiley, Bd. 63.2017, 1, S. 15-22

[Imp.fact.: 2,980]

**Wiedmeyer, Viktoria; Anker, Felix; Bartsch, Clemens; Voigt, Andreas; John, Volker; Sundmacher, Kai**

Continuous crystallization in a helically coiled flow tube - analysis of flow field, residence time behavior, and crystal growth

In: Industrial & engineering chemistry research - Columbus, Ohio: American Chemical Society, Bd. 56.2017, 13, S. 3699-3712

[Imp.fact.: 2930]

**Wiedmeyer, Viktoria; Voigt, Andreas; Sundmacher, Kai**

Crystal population growth in a continuous helically coiled flow tube crystallizer

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