

# **Publikationsbericht 2007**

**Institut für Verfahrenstechnik**



**Otto-von-Guericke-Universität Magdeburg**

**Fakultät für Verfahrens- und Systemtechnik**

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### 1. Leitung

Prof. Dr.-Ing. habil. Evangelos Tsotsas (geschäftsführender Leiter)

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Prof. Dr.-Ing. habil. Andreas Seidel-Morgenstern

Prof. Dr.-Ing. habil. Kai Sundmacher

Prof. Dr.-Ing. habil. Jürgen Tomas

Dipl.-Phys. Diethard Kürschner

Dipl.-Ing. Aimo Haack

### 2. Hochschullehrer

Prof. Dr.-Ing. Udo Reichl

Prof. Dr.-Ing. habil. Andreas Seidel-Morgenstern

Prof. Dr.-Ing. habil. Kai Sundmacher

Prof. Dr.-Ing. habil. Jürgen Tomas

Prof. Dr.-Ing. habil. Evangelos Tsotsas

Prof. em. Dr.-Ing. Siegfried Kattanek

Jun.-Prof. Dr. rer.nat. habil Ulrich Tallarek

### 3. Veröffentlichungen

#### *Originalartikel in begutachteten internationalen Zeitschriften*

##### **Antoniukas, Linas; Grammel, Hartmut; Sasnauskas, Kestutis; Reichl, Udo**

Profiling of external metabolites during production of hantavirus nucleocapsid protein with recombinant *saccharomyces cerevisiae*

In: Biotechnology letters. - Dordrecht [u.a.]: Springer Science + Business Media B.V, insges. 6 S.;

[Abstract unter URL](#), 2007

[Imp.fact.: 1.134]

##### **Bandaru, Krishna S. V. S. R. ; Kessler, Lars Christian; Wolf, Michael W. ; Reichl, Udo; Seidel-Morgenstern, Andreas; Pushpavanam, Subramaniam**

Hydrodynamic characteristics and expansion behavior of beds containing single and binary mixtures of particles

In: Industrial & engineering chemistry research. - Washington, DC: American Chemical Society, Bd. 46.2007, 13, S.

4686-4694; [Link unter URL](#)

[Imp.fact.: 1.518]

##### **Brzic, Danica; Ahchieva, Desislava; Peglow, Mirko; Heinrich, Stefan**

An experimental study of the partial oxidation of ethane to ethylene in a shallow fluidized bed reactor

In: Srpsko Hemijsko Društvo: Journal of the Serbian Chemical Society. - Belgrade: Soc., Bd. 72.2007, 2, S. 183-192;

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[Imp.fact.: 0.389]

**Caro, Jürgen; Caspary, Karl J. ; Hamel, Christof; Hoting, Björn; Kölsch, Peter; Langanke, Bernd; Nassauer, Konrad; Noack, Manfred; Schiestel, Thomas; Schroeder, Michael; Byun, Young Chang; Seidel-Morgenstern, Andreas; Tsotsas, Evangelos; Wang, Haihui; Werth, Steffen**

Perovskit-Hohlfasermembranen für die katalytische Partialoxidation von Methan zu Synthesegas

In: Chemie - Ingenieur - Technik. - Weinheim: Wiley-VCH Verl., Bd. 79.2007, 6, S. 831-842; [Link unter URL](#)

[Imp.fact.: 0.392]

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Catalytic membrane reactors for partial oxidation using perovskite hollow fiber membranes and for partial hydrogenation using a catalytic membrane contactor

In: Industrial & engineering chemistry research. - Washington, DC: American Chemical Society, Bd. 46.2007, 8, S. 2286-2294; [Link unter URL](#)

[Imp.fact.: 1.504]

**Chalakov, Lyubomir; Rhiko-Struckmann, Liisa; Munder, Barbara; Rau, Helmut; Sundmacher, Kai**

Reaction induced current generation by butane oxidation in high temperature electrochemical membrane reactor

In: The chemical engineering journal. - Amsterdam: Elsevier, Bd. 131.2007, 1/3, S. 15-22; [Link unter URL](#)

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**Chalakov, Lyubomir; Rihko-Struckmann, Liisa K. ; Munder, Barbara; Sundmacher, Kai**

Feasibility study of the oxidative dehydrogenation of ethane in an electrochemical packed-bed membrane reactor

In: Industrial & engineering chemistry research. - Washington, DC: American Chemical Society, Bd. 46.2007, 25, S. 8665-8673; [Link unter URL](#)

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**Czapla, F. ; Lorenz, H. ; Elsner, M. P. ; Seidel-Morgenstern, Andreas**

Einfluss der Prozessführungsstrategie auf Produktivität und Produkteigenschaften einer "bevorzugten Kristallisation"

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**Elsner, Martin Peter; Ziomek, Grzegorz; Seidel-Morgenstern, Andreas**

Simultaneous preferential crystallization in a coupled, batch operation mode. Part I: Theoretical analysis and optimization

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**Galvita, Vladimir; Sundmacher, Kai**

Cyclic water gas shift reactor (CWGS) for carbon monoxide removal from hydrogen feed gas for PEM fuel cells

In: The chemical engineering journal. - Amsterdam: Elsevier, Bd. 134.2007, 1/3, S. 168-174; [Link unter URL](#)

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Redox behavior and reduction mechanism of Fe<sub>2</sub>O<sub>3</sub>-CeZrO<sub>2</sub> as oxygen storage material

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**Gangadwala, J. ; Radulescu, G. ; Kienle, Achim; Sundmacher, Kai**

Computer aided design of reactive distillation processes for the treatment of waste waters polluted with acetic acid

In: Computers & chemical engineering. - Amsterdam [u.a.]: Elsevier, Bd. 31.2007, 11, S. 1535-1547; [Link unter URL](#)

[Imp.fact.: 1.404]

**Gedicke, Knut; Antos, Dorota; Seidel-Morgenstern, Andreas**

Effect on separation of injecting samples in a solvent different from the mobile phase

In: Journal of chromatography. - Amsterdam [u.a.]: Elsevier, Bd. 1162.2007, 1, S. 62-73; [Link unter URL](#)

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**Gedicke, Knut; Kaspereit, M. ; Beckmann, W. ; Budde, U. ; Lorenz, H. ; Seidel-Morgenstern, Andreas**

Conceptual design and feasibility study of combining continuous chromatography and crystallization for stereoisomer separations

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**Hampel, Robert; Heinrich, Stefan; Peglow, Mirko; Mörl, Lothar**

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In: Chemie - Ingenieur - Technik. - Weinheim: Wiley-VCH Verl., Bd. 79.2007, 1/2, S. 82-90; [Link unter URL](#)

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**Haus, Utz-Uwe; Michaels, Dennis; Seidel-Morgenstern, Andreas; Weismantel, Robert**

A method to evaluate the feasibility of TMB chromatography for reduced efficiency and purity requirements based on discrete optimization

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**Heineken, Wolfram; Flockerzi, Dietrich; Steyer, Christiane; Voigt, Andreas; Sundmacher, Kai**

Nonlinear dynamics of continuous precipitation reactors - a model based analysis

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Pore-scale dispersion in electrokinetic flow through a random sphere packing

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**Hundt, B. ; Best, Claudia; Schlawin, N. ; Kaßner, H. ; Genzel, Y. ; Reichl, Udo**

Establishment of a mink enteritis vaccine production process in stirred-tank reactor and wave bioreactor microcarrier culture in 1-10 L scale

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Direct capture of influenza A virus from cell culture supernatant with Sartobind anion-exchange membrane adsorbers  
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**Klose, Frank; Wolff, Tanja; Lorenz, Heike; Seidel-Morgenstern, Andreas; Suchorski, Yuri; Piorkowska, Monika; Weiß, Helmut**

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Understanding the dynamic behaviour of direct methanol fuel cells - response to step changes in cell current

In: Journal of electroanalytical chemistry. - Amsterdam: Elsevier, Bd. 609.2007, 2, S. 105-119; [Link unter URL](#)

**Krewer, Ulrike; Pfafferoth, Matthias; Kamat, A. ; Fernandez Menendez, D. ; Sundmacher, Kai**

Hydrodynamic characterisation and modelling of anode flow fields of direct methanol fuel cells

In: The chemical engineering journal. - Amsterdam: Elsevier, Bd. 126.2007, 2/3, S. 87-102; [Link unter URL](#)

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**Kumar, Jitendra; Peglow, Mirko; Warnecke, Gerald; Heinrich, Stefan**

An efficient numerical technique for solving population balance equation involving aggregation, breakage, growth and nucleation

In: Powder technology. - Amsterdam [u.a.]: Elsevier, Bd. 179.2007, S. 205-228; [Link unter URL](#)

[Imp.fact.: 1.232]

**Kwapinska, Marzena; Saage, Gabriela; Tsotsas, Evangelos**

Continuous versus discrete modelling of heat transfer to agitated beds

In: Powder technology. - Amsterdam [u.a.]: Elsevier Science, Bd. 179.2007, S. 140-151; [Abstract unter URL](#)

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**Lorenz, H. ; Capla, F. ; Polenske, D. ; Elsner, M. P. ; Seidel-Morgenstern, Andreas**

Crystallization based separation of enantiomers (review)

In: Chimikotehnologien i Metalurgicen Universitet <Sofija>: Journal of the University of Chemical Technology and Metallurgy. - Sofia, Bd. 42.2007, 1, S. 5-16

**Lübke, Robert; Seidel-Morgenstern, Andreas; Tobiska, Lutz**

Numerical method for accelerated calculation of cyclic steady state of ModiConSMB-processes

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**Metzger, Thomas; Irawan, Anton; Tsotsas, Evangelos**

Influence of pore structure on drying kinetics - a pore network study

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Isothermal drying of pore networks - influence of fiction for different pore structures

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[Imp.fact.: 1.029]

**Munder, Barbara; Rihko-Struckmann, Liisa; Sundmacher, Kai**

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**Nischang, Ivo; Reichl, Udo; Seidel-Morgenstern, Andreas; Tallarek, Ulrich**

Concentration polarization and nonequilibrium electroosmotic slip in dense multiparticle systems

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**Nowak, J. ; Gedicke, Knut; Antos, D. ; Piatkowski, W. ; Seidel-Morgenstern, Andreas**

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**Opitz, Lars; Lehmann, Sylvia; Zimmermann, Anke; Reichl, Udo; Wolf, Michael W.**

Impact of adsorbents selection on capture efficiency of cell culture derived human influenza viruses

In: Journal of biotechnology. - Amsterdam: Elsevier, Bd. 131.2007, 3, S. 309-317; [Link unter URL](#)

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**Poplewska, Izabela; Kramarz, Renata; Piatkowski, Wojciech; Seidel-Morgenstern, Andreas; Antos, Dorota**

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**Renken, Albert; Arntz, Dietrich; Gerhardt, Wolfgang; Seidel-Morgenstern, Andreas**

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[Imp.fact.: 1.629]

**Sainio, T. ; Kaspereit, M. ; Kienle, Achim; Seidel-Morgenstern, Andreas**

Thermal effects in reactive liquid chromatography

In: Chemical engineering science. - Amsterdam: Elsevier, Bd. 62.2007, 18/20, S. 5674-5681; [Link unter URL](#)

[Imp.fact.: 1.629]

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Characterization of a three bacteria mixed culture in a chemostat - evaluation and application of a quantitative terminal-restriction fragment length polymorphism (T-RFLP) analysis for absolute and species specific cell enumeration

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[Imp.fact.: 1.409]

**Seebach, Axel; Seidel-Morgenstern, Andreas**

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[Imp.fact.: 1.518]

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**Talwalkar, Sandip; Mankar, Surendra; Katariya, Amit; Aghalayam, Preeti; Ivanova, Mariyana; Sundmacher,**

**Kai; Mahajani, Sanjay**

Selectivity engineering with reactive distillation for dimerization of C4 olefins - experimental and theoretical studies  
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[Imp.fact.: 1.518]

**Testu, A. ; Didierjean, S. ; Maillet, D. ; Moyne, C. ; Metzger, Thomas; Niass, T.**

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In: International journal of heat and mass transfer. - Amsterdam [u.a.]: Elsevier, Bd. 50.2007, 7/8, S. 1469-1484;  
[Link unter URL](#)  
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**Tomas, Jürgen**

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**Tsotsas, Evangelos; Kwapinska, Marzena; Saage, Gabriela**

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In: Drying technology. - New York, NY [u.a.]: Dekker, Bd. 25.2007, 7/8, S. 1377-1391; [Link unter URL](#)  
[Imp.fact.: 1.100]

**Tykhoniuk, Rostyslav; Tomas, Jürgen; Luding, Stefan; Kappl, Michael; Heim, Lars; Butt, Hans-Jürgen**

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The use of CO stripping for in situ fuel cell catalyst characterization  
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Herstellung maßgeschneiderter Nanopartikel durch Fällung in Mikroemulsionen  
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[Imp.fact.: 0.392]

**Weyd, Marcus; Richter, Hannes; Puhlfürß, Petra; Voigt, Ingolf; Hamel, Christof; Seidel-Morgenstern,**



### **Andreas**

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### **Yu, E. H. ; Sundmacher, Kai**

Enzyme electrodes for glucose oxidation prepared by electropolymerization of pyrrole

In: Institution of Chemical Engineers: Transactions of the Institution of Chemical Engineers. - Rugby: Inst. of Chem. Engineers, Bd. 85.2007, 5, S. 489-493

### **Zhang, L. ; Gedicke, Knut; Kuznetsov, M. A. ; Staroverov, S. M. ; Seidel-Morgenstern, Andreas**

Application of an eremomycin-chiral stationary phase for the separation of DL-methionine using simulated moving bed technology

In: Journal of chromatography. - Amsterdam [u.a.]: Elsevier, Bd. 1162.2007, 1, S. 90-96; [Link unter URL](#)

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### **Originalartikel in begutachteten nationalen Zeitschriften**

#### **Peglow, Mirko; Kettner, Christian; Metzger, Thomas; Tsotsas, Evangelos**

Ein analytisches populationsbilanzmodell für die kontinuierliche Wirbelschichttrocknung

In: Tambovskij Gosudarstvennyj Techniceskij Universitet: Vestnik Tambovskogo Gosudarstvennogo Techniceskogo Universiteta. - Tambov: Izdat. TGTU, Bd. 13.2007, 2, S. 4774-489

### **Originalartikel in begutachteten zeitschriftenartigen Reihen**

#### **Mörl, Lothar; Heinrich, Stefan; Peglow, Mirko**

Fluidized bed spray granulation

In: Handbook of powder technology; Vol. 11: Granulation. - Amsterdam [u.a.]: Elsevier, S. 21-188; Handbook of powder technology; 11, 2007

#### **Schubert, Wolfgang; Tomas, Jürgen**

Liberation of valuables embedded in particle compounds and solid waste

In: Particle breakage. - Amsterdam [u.a.]: Elsevier, S. 989-1018; Handbook of powder technology; 12, 2007

### **Wissenschaftliche Monografien**

#### **Mladenchev, Theodor**

Modellierung des Filtrations- und Fließverhaltens von ultrafeinen, kompressiblen, flüssigkeitsgesättigten

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#### **Suherman**

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[Zsfassung in dt. Sprache]

### **Herausgeberschaften**

#### **Sundmacher, Kai; Kienle, Achim; Pesch, Hans J. ; Berndt, Joachim F. ; Huppmann, Gerhard**

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### **Buchbeiträge**

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**Bock, A. ; Reichl, Udo**

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