

Publikationsliste Prof. Dr.-Ing. Achim Kienle

Monographien

- [1] *Kienle, A.*: Nichtlineare Wellenphänomene und Stabilität stationärer Zustände in Destillationskolonnen. Dissertation, Universität Stuttgart, 1997. VDI Fortschrittsberichte Nr. 3/506, VDI-Verlag, Düsseldorf.

Herausgeberschaften

- [2] *Hrsg.: Sundmacher, K. und Kienle, A.* Reactive Distillation – Status and Future Directions. Wiley-VCH, Weinheim, 2002.
- [3] *Hrsg.: Gilles, E. D. und Kienle, A.* Particulate Processes - A Special Issue of Chemical Engineering Science, Volume 57, Nr. 20. Elsevier, London, 2002.
- [4] *Hrsg.: Sundmacher, K., Kienle, A., und Seidel-Morgenstern, A.* Integrated Chemical Processes. Wiley-VCH, Weinheim, 2005.
- [5] *Kienle, A., Seidel-Morgenstern, A., und Sundmacher, K.*: Particulate processes a special issue of Chemical Engineering and Processing, Volume 45. Elsevier, 2006.
- [6] *Hrsg.: Sundmacher, K., Kienle, A., Pesch, H. J., Berndt, J. F., und Huppmann, G.* Molten Carbonate Fuel Cells. Modeling, Analysis, Simulation, and Control. Wiley-VCH, Weinheim, 2007.

Artikel in Fachzeitschriften

- [7] *Kienle, A. und Marquardt, W.*: Bifurcation analysis and steady-state multiplicity of multicomponent, non-equilibrium distillation processes. Chem. Engng. Sci. 46 (1991), S. 1757–1769.
- [8] *Kienle, A., Marquardt, W., und Gilles, E. D.*: Computing multiple steady states in homogeneous azeotropic distillation processes. Comp. Chem. Engng. 18, Suppl. (1994), S. 37–41.
- [9] *Kienle, A., Groebel, M., und Gilles, E. D.*: Multiple steady states in binary distillation - Theoretical and experimental results. Chem. Engng. Sci. 50(17) (1995), S. 2691–2703.
- [10] *Kienle, A., Lauschke, G., Gehrke, V., und Gilles, E. D.*: On the dynamics of the circulation loop reactor- Numerical methods and analysis. Chem. Engng. Sci. 50 (1995), S. 2361–2375.
- [11] *Gilles, E. D., Lauschke, G., Kienle, A., und Storz, M.*: Some aspects of integrated process operation. A. Rev. Control 20 (1996), S. 9–22.
- [12] *Mohl, K. D., Kienle, A., Gilles, E. D., Rapmund, P., Sundmacher, K., und Hoffmann, U.*: Nonlinear dynamics of reactive distillation processes for the production of fuel ethers. Comp. Chem. Engng. 21, Suppl. (1997), S. 989–994.
- [13] *Dorn, C., Güttinger, T., Wells, G., Morari, M., Kienle, A., Klein, E., und Gilles, E. D.*: Stabilization of an unstable distillation column. Ind. Engng. Chem. Res. 37 (1998), S. 506–515.
- [14] *Hua, X.-M., Mangold, M., Kienle, A., und Gilles, E. D.*: State profile estimation of an autothermal periodic fixed-bed reactor. Chem. Engng. Sci. 53 (1998), S. 47–58.
- [15] *Hua, X.-M., Mangold, M., Kienle, A., und Gilles, E. D.*: Nonlinear inferential control of an autonomous periodic fixed-bed reactor. J. Proc. Contr. 8 (1998), S. 239–250.
- [16] *Mangold, M., Mohl, K. D., Kienle, A., und Gilles, E. D.*: Analyse nichtlinearer Phänomene bei verfahrenstechnischen Prozessen. Chem.-Ing.-Tech. 70 (1998), S. 371–381.

- [17] *Mohl, K. D., Kienle, A., und Gilles, E. D.*: Mehrfache stationäre Zustände bei der Herstellung des Kraftstoffethers TAME durch Reaktivrektifikation - I. Theoretische Analyse. *Chem.-Ing.-Tech.* 70 (1998), S. 524–527. English translation published in *Chem. Engng. Technol.* 21 (1998), 133-136.
- [18] *Mohl, K. D., Kienle, A., und Gilles, E. D.*: Multiple steady states in a reactive distillation column for the production of TAME I. Theoretical analysis. *Chemical Engineering Technology* 21 (1998), S. 133–136.
- [19] *Mangold, M., Kienle, A., Gilles, E. D., Richter, M., und Roschka, E.*: Coupled reaction zones in a circulation loop reactor. *Chem. Engng. Sci.* 54 (1999), S. 2597–2607.
- [20] *Mohl, K. D., Kienle, A., Gilles, E. D., Rapmund, P., Sundmacher, K., und Hoffmann, U.*: Steady-state multiplicities in reactive distillation columns for the production of fuel ethers MTBE and TAME via reactive distillation - Theoretical and experimental results. *Chem. Engng. Sci.* 54 (1999), S. 1029–1043.
- [21] *Stein, E., Kienle, A., Esparta, R., Mohl, K. D., und Gilles, E. D.*: Optimization of a reactor network for ethylene glycol synthesis – An algorithmic approach. *Comp. Chem. Engng.* 23, Suppl. (1999), S. 903–906.
- [22] *Tränkle, F., Kienle, A., Mohl, K. D., Zeitz, M., und Gilles, E. D.*: Object-oriented modeling of distillation processes. *Comp. Chem. Engng.* 23, Suppl. (1999), S. 743–746.
- [23] *Kienle, A.*: Low-order dynamic models for ideal multicomponent distillation processes using nonlinear wave propagation theory. *Chem. Engng. Sci.* 55 (2000), S. 1817–1828.
- [24] *Mangold, M., Kienle, A., Mohl, K. D., und Gilles, E. D.*: Nonlinear computation using DIVA - Methods and applications. *Chem. Engng. Sci.* 55 (2000), S. 441–454.
- [25] *Stein, E., Kienle, A., und Sundmacher, K.*: Separation Using Coupled Reactive Distillation Columns. *Chem. Engng.* 107(13) (2000), S. 68–72.
- [26] *Mohl, K. D., Kienle, A., Sundmacher, K., und Gilles, E. D.*: A theoretical study of kinetic instabilities in catalytic distillation: Influence of transport limitations inside the catalyst. *Chem. Engng. Sci.* 56 (2001), S. 5239–5254.
- [27] *Pushpavanam, S. und Kienle, A.*: Nonlinear behavior of an ideal reactor separator network with mass recycle. *Chem. Engng. Sci.* 56 (2001), S. 2837–2849.
- [28] *Gilles, E. D. und Kienle, A.*: Particulate processes: a special issue of chemical engineering science. *Chemical Engineering Science* 57(20) (2002), S. 4255.
- [29] *Pathath, P. K. und Kienle, A.*: A numerical bifurcation analysis of nonlinear oscillations in crystallization processes. *Chem. Engng. Sci.* 57 (2002), S. 4391–4399.
- [30] *Qi, Z., Sundmacher, K., Stein, E., Kienle, A., und Kolah, A.*: Reactive separation of isobutene from C4 crack fractions by catalytic distillation processes. *Separation and Purification Technology* 26 (2002), S. 147–163.
- [31] *Schramm, H., Kaspereit, M., Kienle, A., und Seidel-Morgenstern, A.*: Improving simulated moving bed processes by cyclic modulation of the feed concentration. *Chem. Engng. Technol.* 25 (2002), S. 1151–1155.
- [32] *Zeyer, K. P., Mangold, M., Shah, S., Kienle, A., und Gilles, E. D.*: Yield effects in single and coupled nonlinear thermokinetic reaction systems. *Z. Phys. Chem.* 216 (2002), S. 403–433.

- [33] *Balasubramanian, P., Kosuri, M. R., Pushpavanam, S., und Kienle, A.*: Effect of delay on the stability of a coupled reactor-separator system. *Ind. Engng. Chem. Res.* 42 (2003), S. 3758–3764.
- [34] *Gangadwala, J., Mankar, S., Mahajani, S., Kienle, A., und Stein, E.*: Esterification of acetic acid with butanol in the presence of ion exchange resins as catalysts. *Ind. Engng. Chem. Res.* 42 (2003), S. 2146–2155.
- [35] *Grüner, S., Mohl, K. D., Kienle, A., Gilles, E. D., Fernholz, G., und Friedrich, M.*: Nonlinear control of an industrial reactive distillation column. *Contr. Engng. Practice* 11 (2003), S. 915–925.
- [36] *Kienle, A. und Sundmacher, K.*: Integrierte grundoperationen: Reaktivdestillation - gegenwärtiger Stand und weitere Entwicklungsmöglichkeiten. *CIT Plus* 4 (2003), S. 57–58.
- [37] *Namjoshi, A., Ramkrishna, D., und Kienle, A.*: Steady state multiplicity in bioreactors: Bifurcation analysis of cybernetic models. *Chem. Engng. Sci.* 58 (2003), S. 793–800.
- [38] *Pathath, P. K. und Kienle, A.*: Nonlinear oscillations in ammonium sulfate crystallization – A comparison of different model predictions. *Ind. Engng. Chem. Res.* 42 (2003), S. 6949–6955.
- [39] *Schramm, H., Grüner, S., und Kienle, A.*: Optimal operation of simulated moving bed chromatographic processes by means of simple feedback control. *Journal of Chromatography A*, 1006 (2003), S. 3–13.
- [40] *Schramm, H., Kaspereit, M., Kienle, A., und Seidel-Morgenstern, A.*: Simulated moving bed process with cyclic modulation of the feed concentration. *Journal of Chromatography A*, 1006 (2003), S. 77–86.
- [41] *Schramm, H., Kaspereit, M., Kienle, A., und Seidel-Morgenstern, A.*: Improved operation of simulated moving bed process through cyclic modulation of feed flow and feed concentration. *Chem. Engng. Sci.* 58 (2003), S. 5217–5227.
- [42] *Schramm, H., Kaspereit, M., Kienle, A., und Seidel-Morgenstern, A.*: Verbessertes Betrieb von Simulated Moving Bed-Prozessen durch zyklische Modulation der Feedkonzentration. *Chemie-Ingenieur-Technik* 75 (2003), S. 379–383.
- [43] *Waschler, R., Pushpavanam, S., und Kienle, A.*: Multiple steady states in two-phase reactors under boiling conditions. *Chem. Engng. Sci.* 58 (2003), S. 2203–2214.
- [44] *Zeyer, K. P., Pushpavanam, S., und Kienle, A.*: Nonlinear behavior of reactor separator networks: Influence of separator control structure. *Ind. Engng. Chem. Res.* 42 (2003), S. 3294–3303.
- [45] *Gangadwala, J., Stein, E., Kienle, A., und Mahajani, S.*: Production of butyl acetate by catalytic distillation – Process design studies. *Ind. Engng. Chem. Res.* 43 (2004), S. 136–143.
- [46] *Grüner, S. und Kienle, A.*: Equilibrium theory and nonlinear waves for reactive distillation columns and chromatographic reactors. *Chem. Engng. Sci.* 59 (2004), S. 901–918.
- [47] *Krishna, M. V., Pushpavanam, S., und Kienle, A.*: Effect of Conversion-Dependent Viscosity on the Nonlinear Behavior of a Reactor with Fixed Pressure Drop. *Ind. Engng. Chem. Res.* 43 (2004), S. 8284–8292.
- [48] *Mangold, M., Sheng, M., Heidebrecht, P., Kienle, A., und Sundmacher, K.*: Development of physical models for the process control of a molten carbonate fuel cell system. *Chem. Engng. Sci.* 59 (2004), S. 4847–4852.

- [49] Qi, Z., Kienle, A., Stein, E., Mohl, K. D., Tuchlenski, A., und Sundmacher, K.: MTBE decomposition in a reactive distillation column. *Chem. Engng. Research and Design* 82 (2004), S. 185–191.
- [50] Zeyer, K. P., Kulkarni, A. A., Pushpavanam, S., und Kienle, A.: Nichtlineare Dynamik in Reaktor-Separator-Systemen. *Chem.-Ing.-Tech.* 76 (2004), S. 1313–1313.
- [51] Balasubramaniam, P., Pushpavanam, S., Kienle, A., und Balaraman, K. S.: Effect of delay on the stability of a coupled reactor-flash system sustaining an elementary non-isothermal reaction. *Industrial and Engineering Chemistry Research* 44 (2005), S. 3619–3625.
- [52] Häfele, M., Kienle, A., Boll, M., Schmidt, C.-U., und Schwibach, M.: Dynamic simulation of a tubular reactor for the production of low-density polyethylene using adaptive method of lines. *Journal of Computational and Applied Mathematics* 183 (2005), S. 288–300.
- [53] Kienle, A., Sundmacher, K., und Seidel-Morgenstern, A.: Zur Integration von Reaktion und Stofftrennung. *Chemie-Ingenieur-Technik* 77(9) (2005), S. 1417–1429.
- [54] Mangold, M., Angeles-Palacios, O., Ginkel, M., Kremling, A., Waschler, R., Kienle, A., und Gilles, E. D.: Computer aided modeling of chemical and biological systems – methods, tools, and applications. *Industrial & Engineering Chemistry Research* 44(8) (2005), S. 2579–2591.
- [55] Mishra, B. V., Mayer, E., Raisch, J., und Kienle, A.: Short-Term Scheduling of Batch Processes. A Comparative Study of Different Approaches. *Ind. Eng. Chem. Res.* 44 (2005), S. 4022–4034.
- [56] Painuly, A., Pushpavanam, S., und Kienle, A.: Steady state behavior of coupled nonlinear reactor-separator systems: Effect of different separators. *Ind. Eng. Chem. Res.* 44 (2005), S. 2165–2173.
- [57] Singh, A., Hiwale, R., Mahajani, S. M., Gudi, R. D., Gangadwala, J., und Kienle, A.: Production of butyl acetate by catalytic distillation. theoretical and experimental studies. *Ind. Eng. Chem. Res.* 44(9) (2005), S. 3042–3052.
- [58] Vu, T. D., Seidel-Morgenstern, A., Grüner, S., und Kienle, A.: Analysis of Ester Hydrolysis Reactions in a Chromatographic Reactor Using Equilibrium Theory and a Rate Model. *Ind. Engng. Chem. Res.* 44 (2005), S. 9565–9574.
- [59] Gangadwala, J., Kienle, A., Haus, U. U., Michaels, D., und Weismantel, R.: Global Bounds on Optimal Solutions for the Production of 2,3 Dimethylbutene-1. *Ind. Engng. Chem. Res.* 45 (2006), S. 2261–2271.
- [60] Grötsch, M., Gundermann, M., Mangold, M., Kienle, A., und Sundmacher, K.: Development and experimental investigation of an extended Kalman filter for a molten carbonate fuel cell system. *Journal of Process Control* 16 (2006), S. 985–992.
- [61] Grüner, S., Mangold, M., und Kienle, A.: Dynamics of Reaction Separation Processes in the Limit of Chemical Equilibrium. *AIChE Journal* 52(3) (2006), S. 1010–1026.
- [62] Häfele, M., Kienle, A., Boll, M., und Schmidt, C.-U.: Modeling and analysis of a plant for the production of low density polyethylene. *Comp. Chem. Engng.* 31 (2006), S. 51–65.
- [63] Krishna, M. V., Pushpavanam, S., Kienle, A., und Vetukuri, S. R. R.: Nonlinear behavior of reactor-separator systems with azeotropic mixtures. *Ind. Eng. Chem. Res.* 45 (2006), S. 212–222.
- [64] Kumar, M. V., Raju, V. S. R., Pushpavanam, S., und Kienle, A.: Effect of the Minimum Flux Condition in the Settler on the Nonlinear Behavior of the Activated Sludge Process. *Ind. Eng. Chem. Res.* 45 (2006), S. 5996–6006.

- [65] *Radichkov, R., Müller, T., Kienle, A., Heinrich, S., Peglow, M., und Mörl, L.:* A numerical bifurcation analysis of continuous fluidized bed spray granulation with external product classification. *Chemical Engineering and Processing* 45 (2006), S. 826–837.
- [66] *Raju, V. S. R., Pushpavanam, S., und Kienle, A.:* Nonlinear behavior of reactor separator networks with mass and energy recycle. *Asia-Pacific Journal of Chemical Engineering* 1(1-2) (2006), S. 44–53.
- [67] *Sheng, M., Mangold, M., und Kienle, A.:* A strategy for the spatial temperature control of a molten carbonate fuel cell system. *Journal of Power Sources* 162 (2006), S. 1213–1219.
- [68] *Vetukuri, S. R. R., Pushpavanam, S., Zeyer, K. P., und Kienle, A.:* Nonlinear behavior of coupled reactor-separator systems with azeotropic vapor-liquid equilibria VLEs: Comparison of different control strategies. *Ind. Engng. Chem. Res.* 45 (2006), S. 1019–1028.
- [69] *Waschler, R., Angeles-Palacios, O., Ginkel, M., und Kienle, A.:* Object-oriented modelling of large scale chemical engineering processes with ProMoT. *Mathematical and Computer Modelling of Dynamical Systems* 12(1) (2006), S. 5–18.
- [70] *Zhang, F., Mangold, M., und Kienle, A.:* Stationary spatially periodic and aperiodic solutions in membrane reactors. *Chemical Engineering Science* 61(21) (2006), S. 7161–7170.
- [71] *Flockerzi, D., Bohmann, A., und Kienle, A.:* On the existence and computation of reaction invariants. *Chemical Engineering Science* 62 (2007), S. 4811–4816.
- [72] *Gangadwala, J. und Kienle, A.:* MINLP optimization of butyl acetate synthesis. *Chem. Engng. Proc.* 46 (2007), S. 107–118.
- [73] *Gangadwala, J., Radulescu, G., Kienle, A., und Sundmacher, K.:* Computer aided design of reactive distillation processes for the treatment of waste waters polluted with acetic acid. *Computers and Chemical Engineering* 31 (2007), S. 1535–1547.
- [74] *Kaspereit, M., Seidel-Morgenstern, A., und Kienle, A.:* Design of simulated moving bed processes under reduced purity requirements. *Journal of Chromatography A* 1162 (2007), S. 2–13.
- [75] *Krasnyk, M., Ginkel, M., Mangold, M., und Kienle, A.:* Numerical analysis of higher order singularities in chemical process models. *Computers & Chemical Engineering* 31(9) (2007), S. 1100–1110.
- [76] *Kulkarni, A. A., Zeyer, K. P., Jacobs, T., und Kienle, A.:* Miniaturized Systems for Homogeneously and Heterogeneously Catalyzed Liquid-Phase Esterification Reaction. *Industrial & Engineering Chemistry Research* 46(16) (2007), S. 5271–5277.
- [77] *Radulescu, G., Paraschiv, N., und Kienle, A.:* An Original Approach for the Dynamic Simulation of a Crude Oil Distillation Plant - 2. Setting-up and Testing the Simulator. *Revista de Chimie* 58(3) (2007), S. 349–354.
- [78] *Sainio, T., Kaspereit, M., Kienle, A., und Seidel-Morgenstern, A.:* Thermal effects in reactive liquid chromatography. *Chemical Engineering Science* 62 (2007), S. 5674–5681.
- [79] *Zeyer, K. P., Kulkarni, A. A., Kienle, A., Kumar, V. M., und Pushpavanam, S.:* Nonlinear Behavior of Reactor-Separator Networks: Influence of the Energy Balance Formulation. *Industrial & Engineering Chemistry Research* 46 (2007), S. 1197–1207.
- [80] *Gangadwala, J., Haus, U.-U., Jach, M., Kienle, A., Michaels, D., und Weismantel, R.:* Global analysis of combined reaction distillation processes. *Computers and Chemical Engineering* 32 (2008), S. 343–355.

- [81] *Gangadwala, J., Radulescu, G., Kienle, A., Steyer, F., und Sundmacher, K.*: New processes for recovery of acetic acid from waste water. *Clean Technology & Environmental Policy* 3 (2008), S. 245–254.
- [82] *Kulkarni, A. A., Zeyer, K. P., Jacobs, T., Kaspereit, M., und Kienle, A.*: Feasibility Studies and Dynamics of Catalytic Liquid Phase Esterification Reactions in a Micro Plant. *Chemical Engineering Journal* 135s (2008), S. 270–275.
- [83] *Kumar, M. V., Kienle, A., Zeyer, K. P., und Pushpavanam, S.*: Nonlinear analysis of the effect of maintenance in continuous cell cultures. *Mathematics and Computers in Simulation* 79 (2008), S. 728–748.
- [84] *Sidorenko, Y., Schulze-Horsel, J., Voigt, A., Reichl, U., und Kienle, A.*: Stochastic population balance modeling of influenza virus replication in vaccine production processes. *Chemical Engineering Science* 63 (2008), S. 157–169.
- [85] *Sidorenko, Y., Voigt, A., Schulze-Horsel, J., Reichl, U., und Kienle, A.*: Stochastic population balance modeling of influenza virus replication in vaccine production processes ii. detailed description of the replication mechanism. *Chemical Engineering Science* 63 (2008), S. 2299–2304.
- [86] *García-Palacios, J., Kaspereit, M., und Kienle, A.*: Conceptual Design of Integrated Chromatographic Processes for the Production of Single (Stereo-)Isomers. *Chemical Engineering and Technology* 32(9) (2009), S. 1392–1402.
- [87] *Grötsch, M., Mangold, M., und Kienle, A.*: Analysis of the Coupling Behavior of PEM Fuel Cells and DC-DC Converters. *Energies* 2 (2009), S. 71–96.
- [88] *Kumar, M. V., Zeyer, K. P., Kienle, A., und Pushpavanam, S.*: Conceptual Analysis of the Effect of Kinetics on the Stability and Multiplicity of a Coupled Bioreactor-Separator System Using a Cybernetic Modeling Approach. *Ind. Eng. Chem. Res.* 48 (2009), S. 10962–10975.
- [89] *Radulescu, G., Gangadwala, J., Paraschiv, N., Kienle, A., und Sundmacher, K.*: Dynamics of reactive distillation processes with potential liquid phase splitting based on equilibrium stage models. *Comput. Chem. Engng.* 33 (2009), S. 590–597.
- [90] *Sommer, S., Böhm, J., und Kienle, A.*: Ein Energie-Management-System für wärmeintensive Produktionsprozesse. *at - Automatisierungstechnik* 57(11) (2009), S. 578–585.
- [91] *Zhang, F., Mangold, M., und Kienle, A.*: Optimal Design of Experiments for Parameter Identification of Ceramic Porous Membranes. *Chemical Engineering & Technology* 32(4) (2009), S. 641–649.
- [92] *Jacobs, T., Kienle, A., und Hauptmann, P.*: Capillary type thermal mass flow sensors for monitoring esterification reactions in residence time micro-reactors. *Chemical Engineering Journal* 160 (2010), S. 827–833.
- [93] *Jacobs, T., Kutzner, C., Kropp, M., Brokmann, G., Lang, W., Steinke, A., Kienle, A., und Hauptmann, P.*: Inline chemical processes analysis in micro-plants based on thermoelectric flow and impedimetric sensors. *Measurement Science and Technology* 21 (2010), S. 1–12.
- [94] *Krasnyk, M., Mangold, M., und Kienle, A.*: Reduction procedure for parametrized fluid dynamics problems based on proper orthogonal decomposition and calibration. *Chemical Engineering Science* 65 (2010), S. 6238–6246.
- [95] *Kunde, C., Hanke-Rauschenbach, R., Mangold, M., Kienle, A., Sundmacher, K., Wagner, S., und Hahn, R.*: Temperature and Humidity Control of a Micro PEM Fuel Cell Stack. *Fuel Cells* 10(6) (2010), S. 949–959.

- [96] *Bück, A., Peglow, M., Tsotsas, E., Mangold, M., und Kienle, A.*: Model-based Measurement of Particle Size Distributions in Layering Granulation Processes. *AIChE Journal* 57(4) (2011), S. 929–941.
- [97] *Franz, A., Song, H.-S., Ramkrishna, D., und Kienle, A.*: Experimental and theoretical analysis of poly(β -hydroxybutyrate) formation and consumption in *Ralstonia eutropha*. *Biochemical Engineering Journal* 55(1) (2011), S. 49–58.
- [98] *García-Palacios, J., Kramer, B., Kienle, A., und Kaspereit, M.*: Experimental validation of a new integrated simulated moving bed process for the production of single enantiomers. *Journal of Chromatography A* 1218(16) (2011), S. 2232–2239.
- [99] *Mangold, M., Piewek, S., Klein, O., und Kienle, A.*: A Model for the Freeze Start Behavior of a PEM Fuel Cell Stack. *Journal of Fuel Cell Science and Technology* 8 (2011), S. 031006–1–031006–9.
- [100] *Paramasivan, G. und Kienle, A.*: Inferential control of reactive distillation columns - An algorithmic approach. *Chemical Engineering Technology* 34(8) (2011), S. 1235–1244.
- [101] *Sommer, S., Müller, P., und Kienle, A.*: Iterative Feedback Tuning of PID Controllers for Reactive Distillation Processes: a Comparison with Relay Feedback Tuning. *Industrial & Engineering Chemistry Research* 50 (2011), S. 9821–9828.
- [102] *Kaspereit, M., Swernath, S., und Kienle, A.*: Evaluation of Competing Process Concepts for the Production of Pure Enantiomers. *Organic Process Research & Development* 16 (2012), S. 353–363.
- [103] *von Langermann, J., Kaspereit, M., Shakeri, M., Lorenz, H., Hedberg, M. H., Jones, M. J., Larson, K., Herschend, B., Arnell, R., Temmel, E., Bäckvall, J.-E., Kienle, A., und Seidel-Morgenstern, A.*: Design of an Integrated Process of Chromatography, Crystallization and Racemization for the Resolution of 2',6'-Pipicoloxylidide (PPX). *Organic Process Research & Development* 16(2) (2012), S. 343–352.
- [104] *Palis, S. und Kienle, A.*: Stabilization of continuous fluidized bed spray granulation with external product classification. *Chemical Engineering Science* 70 (2012), S. 200–209.
- [105] *Palis, S. und Kienle, A.*: Diskrepanz basierte Regelung der kontinuierlichen Flüssigkristallisation. *AT - Automatisierungstechnik* 60 (2012), S. 145–154.
- [106] *Paramasivan, G. und Kienle, A.*: Decentralized Control System Design under Uncertainty Using Mixed Integer Optimization. *Chemical Engineering Technology* 35(2) (2012), S. 261–271.
- [107] *Sommer, S. und Kienle, A.*: Auto-Tuning of Multivariable PID Controllers Using Iterative Feedback Tuning. *at - Automatisierungstechnik* 60(1) (2012), S. 20–27.
- [108] *García-Palacios, J., Kaspereit, M., und Kienle, A.*: Integrated Simulated Moving Bed Processes for the Production of Single Enantiomers *Chemical Engineering & Technology* 34(5) (2011), S. 688–698.
- [109] *Paramasivan, G. und Kienle, A.*: Decentralized control system design for a ternary reactive distillation with inert using mixed integer optimization. *Ind. Eng. Chem. Res.* (2011). (submitted for publication).
- [110] *Disli, I. und Kienle, A.*: Systematic evaluation of models of different complexity for a low-density polyethylene plant. *Mathematical and Computer Modeling of Dynamical Systems* (2012). (accepted for publication).
- [111] *Franz, A., Rehner, R., Kienle, A., und Grammel, H.*: Rapid selection of glucose-utilizing variants of the polyhydroxyalkanoate producer *Ralstonia eutropha* H16 by incubation with high substrate levels. *Letters in Applied Microbiology* (2012). (accepted for publication).

Beiträge in Konferenzproceedings und Büchern

- [112] *Hufnagel, H., Blaß, E., und Kienle, A.*: Dynamische Simulation einer gerührten Flüssig-flüssig-Extraktionskolonne. Proc. GVC Jahrestagung, Stuttgart 1990.
- [113] *Hufnagel, H., Blaß, E., und Kienle, A.*: Operation and simulation of a liquid-liquid extraction column. Proc. ISEC'90, July 16-21, Kyoto, 1990.
- [114] *Kienle, A. und Marquardt, W.*: Nonlinear waves in counter-current separation processes involving highly nonideal multicomponent mixtures. Proc. AIChE Ann. Meeting, Paper 239d, November 11-16, Chicago 1990.
- [115] *Kienle, A., Marquardt, W., und Gilles, E. D.*: Steady state multiplicities in homogeneous azeotropic distillation processes. Proc. AIChE Ann. Meeting, Paper 143a, November 1-6, Miami Beach 1992.
- [116] *Kienle, A., Gilles, E. D., und Marquardt, W.*: Nichtlineare Dynamik in der Verfahrenstechnik. Chem.-Ing.-Tech. 66 (1994), S. 1192.
- [117] *Gilles, E. D., Lauschke, G., Kienle, A., und Storz, M.*: Some aspects of integrated process operation. Proc. Preprints 4th IFAC Symposium on Dynamics and Control of Chemical Reactors, Distillation Columns, and Batch Processes, DYCORDER+95 (Hrsg.: Rawlings, J. B.), Danish Automation Society, 1995, S. 215–228. Also published in *A. Rev. Control*, Vol. 20 (1996), S. 9-22.
- [118] *Kienle, A. und Gilles, E. D.*: Reaktivdestillation - Dynamische Modellierung und Simulation. Proc. 429. Dechema Kolloquium „Reaktivdestillation“, Frankfurt, 9. Feb., 1995.
- [119] *Kienle, A., Groebel, M., und Gilles, E. D.*: Multiple steady states in distillation - Theoretical and experimental results. Proc. HCM - Workshop on Modeling, Dynamics and Control of Distillation Columns, Stuttgart, 27. - 28. Juli, 1995.
- [120] *Hua, X.-M., Mangold, M., Kienle, A., und Gilles, E. D.*: State estimation of a distributed parameter fixed bed reactor system with oscillations. Proc. International Symposium on Advanced Control of Chemical Processes - ADCHEM '97, June 9-11, IFAC, Banff, Canada 1997, S. 207–212.
- [121] *Thiel, C., Rapmund, P., Sundmacher, K., Hoffmann, U., Mohl, K. D., Kienle, A., und Gilles, E. D.*: Intensified production of fuel ethers in reactive distillation columns – Experimental results and theoretical analysis. Proc. First European Congress on Chemical Engineering, Florence, May 4-7, Volume 2, 1997, S. 1423–1426.
- [122] *Kienle, A.*: Reduced models for multicomponent separation processes using nonlinear wave propagation theory. Proc. CHISA'98, Paper 109, 23.-28. August, Praha, Czech Republic, 1998.
- [123] *Kienle, A., Mangold, M., Mohl, K. D., und Gilles, E. D.*: Nonlinear computation using DIVA – Methods and applications. Proc. CHISA'98, Paper 312, 23.-28. August, Praha, Czech Republic, 1998.
- [124] *Kienle, A., Pfisterer, F., Waschler, R., Svjatnyj, V., Gilles, E. D., Anoprienko, A., und Osipova, T.*: Modeling and simulation of a chemical reactor for the production of acetic acid – II. Two-phase model. In: Informatics, Cybernetics and Computer Science (ICCS-98), Donetsk State Technical University, Donetsk 1998, S. 15–23.
- [125] *Klein, E., Kienle, A., und Raisch, J.*: Synthesizing a supervisory control system for the start-up procedure of a distillation column – an approach based on approximating continuous dynamics by DES models. Proc. LSS'98 Symposium on Large Scale Systems: Theory and Application, IFAC. 1998, S. 716–721.

- [126] *Mohl, K. D., Kienle, A., Gilles, E. D., Rapmund, P., Sundmacher, K., und Hoffmann, U.*: Multiple steady states for the production of fuel ethers MTBE and TAME via reactive distillation – Theoretical and experimental results. Proc. AIChE Ann. Meeting, Paper 220c, November 15-20, Miami Beach 1998.
- [127] *Stein, E., Kienle, A., Esparta, R., Mohl, K. D., und Gilles, E. D.*: Optimization of a reactor network for ethylene glycol synthesis. Proc. CHISA'98, Paper 108, 23.-28. August, Praha, Czech Republic, 1998.
- [128] *Sundmacher, K., Hoffmann, U., Rapmund, P., Mohl, K. D., Kienle, A., und Gilles, E. D.*: Nachweis mehrfacher stationärer Betriebszustände einer gepackten Reaktivdestillationskolonne für die Herstellung der Kraftstoffkomponente *tert*-Amylmethylether (TAME). Chem.-Ing.-Tech. 70 (1998), S. 1099.
- [129] *Svjatnyj, V., Kienle, A., Gilles, E. D., Anoprienko, A., und Osipova, T.*: Modelling and simulation of a reactor for acetic acid synthesis using the simulation environment DIVA. In: Informatics, Cybernetics and Computer Science (ICCS-97), Donetsk State Technical University, Donetsk 1998, S. 16–21. In Russian.
- [130] *Kienle, A., Stein, E., Rehm, A., und Kloppenburg, E.*: Low-order dynamic models for two coupled distillation columns. Proc. European Control Conference ECC'99, Paper F1004-4, 31. August - 3. September, Karlsruhe 1999.
- [131] *Klein, E., Wehlan, H., Raisch, J., und Kienle, A.*: Synthese einer Anfahrregelung für eine Destillationskolonne auf der Grundlage einer ereignisdiskreten Approximation der kontinuierlichen Dynamik. Proc. EKA'99 - 6. Fachtagung Entwicklung und Betrieb komplexer Automatisierungssysteme, Mai 27-28, Braunschweig 1999, S. 447–464.
- [132] *Stein, E., Kienle, A., und Gilles, E. D.*: Dynamic optimization of multicomponent distillation processes. In: Scientific Computing in Chemical Engineering II (Hrsg.: Keil, F., Mackens, W., Voß, H., und Werther, J.), Springer-Verlag, Berlin, Heidelberg, New York 1999, S. 362–369.
- [133] *Waschler, R., Kienle, A., Svjatnyj, V., Gilles, E. D., Anoprienko, A., und Osipova, T.*: Modeling and simulation of a chemical reactor for the production of acetic acid. III dynamic phase transitions. Proc. Problems of simulation and computer aided design of Dynamic Systems, 1999, S. 102–109.
- [134] *Kienle, A.*: Nonlinear model reduction for nonreactive and reactive distillation processes using nonlinear wave propagation theory. Proc. SPC-2000, Third Symposium on Process Control, Ploiesti, Romania 2000, S. 72–78.
- [135] *Klein, E., Itigin, A., Raisch, J., und Kienle, A.*: Automatic generation of switching startup schemes for chemical processes. Proc. European Symposium on Computer Aided Process Engineering – 10 (Hrsg.: Pierucci, S.), Elsevier. 2000, S. 619–624.
- [136] *Pushpavanam, S. und Kienle, A.*: Steady state behavior of nonlinear reactor separator networks. Proc. AIChE Ann. Meeting, Paper 361d, November 12-17, Los Angeles 2000.
- [137] *Stein, E., Kienle, A., Kolah, A., Qi, Z., Sundmacher, K., und Mohl, K. D.*: Production of high purity isobutene using coupled reactive distillation columns. Proc. AIChE Ann. Meeting, Paper 245f, November 12-17, Los Angeles 2000.
- [138] *Diehl, M., Disli-Uslu, I., Findeisen, R., Schwarzkopf, S., Allgöwer, F., Bock, H. G., Bürner, T., Gilles, E. D., Kienle, A., Schlöder, J. P., und Stein, E.*: Real-time optimization for large scale processes: Nonlinear model predictive control of a high purity distillation column. In: Online Optimization of

Large Scale Systems (Hrsg.: Grötschel, M., Krumke, S. O., und Rambeau, J.), Springer 2001, S. 363–383.

- [139] *Fernholz, G., Friedrich, M., Grüner, S., Mohl, K. D., Kienle, A., und Gilles, E. D.*: Linear MIMO controller design for an industrial reactive distillation column. Proc. 6th IFAC Symposium on Dynamics and Control of Process Systems – DYCOPS-6 (Hrsg.: G. Stephanopoulos, J. H. Lee, E. S. J.), 2001, S. 137–142.
- [140] *Grüner, S., Mohl, K. D., Kienle, A., Gilles, E. D., Fernholz, G., und Friedrich, M.*: Nonlinear control of an industrial reactive distillation column. Proc. 6th IFAC Symposium on Dynamics and Control of Process Systems – DYCOPS-6 (Hrsg.: G. Stephanopoulos, J. H. Lee, E. S. J.), 2001, S. 125–130.
- [141] *Köhler, R., Mohl, K. D., Schramm, H., Zeitz, M., Kienle, A., Mangold, M., Stein, E., und Gilles, E. D.*: Methods of lines within the simulation environment DIVA for chemical processes. In: Adaptive method of lines (Hrsg.: Vande Wouwer, A., Saucez, P., und Schiesser, W. E.), CRC Press 2001, S. 371–406.
- [142] *Pathath, P. K. und Kienle, A.*: A numerical bifurcation analysis of isothermal crystallization processes. Proc. AIChE Ann. Meeting, Paper 293i, November 4- 9, Reno 2001.
- [143] *Schramm, H., Grüner, S., und Kienle, A.*: New control strategies for moving bed chromatographic processes. 2001. Paper 15-52, 3rd European Congress of Chemical Engineering, ECCE, June 26 - 28, Nürnberg.
- [144] *Schramm, H., Grüner, S., Kienle, A., und Gilles, E. D.*: Control of moving bed chromatographic processes. Proc. European Control Conference, ECC'2001, September 4 - 7 , Porto, Portugal, 2001, S. 2528–2533. Paper Th-A04-04.
- [145] *Stein, E., Kienle, A., Kolah, A., Qi, Z., Sundmacher, K., und Mohl, K. D.*: New concepts for the production of high purity iso-butene in coupled reactive distillation columns. 2001. Paper 6-5, 3rd European Congress of Chemical Engineering, ECCE, June 26 - 28, Nürnberg.
- [146] *Kienle, A.*: Nonlinear dynamics and control of reactive distillation processes. Proc. 15th International Congress of Chemical and Process Engineering CHISA'02, Prague, 25.-29. August, 2002.
- [147] *Kienle, A. und Marquardt, W.*: Nonlinear dynamics and control of reactive distillation processes. In: Reactive Distillation – Status and Future Directions (Hrsg.: Sundmacher, K. und Kienle, A.), Wiley-VCH, Weinheim 2002, S. 241–281.
- [148] *Mangold, M., Mohl, K. D., Grüner, S., Kienle, A., und Gilles, E. D.*: Nonlinear analysis of gPROMS models using DIVA via a CAPE ESO interface. Proc. European Symposium on Computer Aided Process Engineering -12- ESCAPE 12, 26–29 May, The Hague, The Netherlands (Hrsg.: Grievink, J. und van Schijndel, J.), Elsevier, Amsterdam 2002, S. 919–924.
- [149] *Namjoshi, A., Ramkrishna, D., und Kienle, A.*: Steady state multiplicity in bioreactors: Bifurcation analysis of cybernetic models. Proc. 17th International Symposium on Chemical Reaction Engineering ISCRE'17, 25.-28. August, Hong Kong, China, 2002.
- [150] *Qi, Z., Sundmacher, K., Stein, E., und Kienle, A.*: Reactive separation of isobutene from C4-fractions using coupled reactive distillation columns. Proc. DGMK-Conference on Chances for Innovative Processes at the Interface between Refining and Petrochemistry, Berlin, Oktober 9-11, 2002, S. 187–194.
- [151] *Waschler, R., Kienle, A., Anoprienko, A., und Osipova, T.*: Dynamic plantwide modelling, flowsheet simulation and nonlinear analysis of an industrial production plant. Proc. European Symposium on Computer Aided Process Engineering -12- ESCAPE 12, 26–29 May, The Hague, The Netherlands (Hrsg.: Grievink, J. und van Schijndel, J.), Elsevier. 2002, S. 583–588.

- [152] *Chebotarov, M., Ginkel, M., Haefele, M., Mangold, M., Gilles, E. D., Kienle, A., und Svjatnyj, V.*: DIVA-GUI - the graphical user interface for the simulation environment DIVA. Proc. 17. Symposium Simulationstechnik, ASIM 2003, 16-19 May, Magdeburg, Germany (Hrsg.: Hohmann, R.), SCS Publishing House, Erlangen 2003, S. 155–160.
- [153] *Gangadwala, J., Kienle, A., Stein, E., und Mahajani, S.*: Production of butyl acetate by catalytic distillation – Reaction kinetics and process design studies. Proc. 3rd International Symposium on Multifunctional Reactors-ISMR-3, August 27–30, Bath, UK, 2003.
- [154] *Gromov, D., Mishra, B., Raisch, J., und Kienle, A.*: Time optimal control of a batch reactor using Pontryagin's Maximum Principle. Proc. SPC2003 International Symposium on Process Control, October 8, Ploiesti, Romania, 2003, S. 16–21.
- [155] *Häfele, M., Kienle, A., Mähling, F.-O., Schmidt, C.-U., und Schwibach, M.*: Dynamic simulation of a tubular reactor for the production of low density polyethylene. Proc. 4th European Congress of Chemical Engineering, ECCE-4, September 20–26, Granada, Spain, 2003.
- [156] *Haefele, M., Kienle, A., Boll, M., Maehling, F.-O., Schmidt, C.-U., und Schwibach, M.*: Dynamical simulation of a plant for the production of low density polyethylene. Proc. 17. Symposium Simulationstechnik, ASIM 2003, 16-19 May, Magdeburg, Germany (Hrsg.: Hohmann, R.), SCS Publishing House, Erlangen 2003, S. 179–184.
- [157] *Itigin, A., Raisch, J., Moor, T., und Kienle, A.*: A two-level hybrid control strategy for the start-up of a coupled distillation plant. Proc. European Control Conference, ECC, September 1–4, Cambridge, UK, 2003.
- [158] *Kaspereit, M., Schramm, H., Kienle, A., und Seidel-Morgenstern, A.*: Improvement of SMB Processes by Cyclic Modulation of the Feed Concentration. Proc. ECCE 4th European Congress of Chemical Engineering - Topic 7, 21-25 September, 2003.
- [159] *Mishra, B. V., Mayer, E., Raisch, J., und Kienle, A.*: Short-term scheduling of chemical processes: An overall optimization approach. Proc. 4th European Congress of Chemical Engineering, ECCE-4, September 20–26, Granada, Spain, 2003.
- [160] *Pathath, P. K. und Kienle, A.*: A comparison of different models for the prediction of nonlinear oscillations in ammonium sulfate crystallization. Proc. 4th European Congress of Chemical Engineering, ECCE-4, September 20–26, Granada, Spain, 2003.
- [161] *Qi, Z., Sundmacher, K., Kienle, A., Stein, E., Mohl, K. D., und Tuchlenski, A.*: MTBE decomposition in a reactive distillation column. Proc. 3rd International Symposium on Multifunctional Reactors, ISMR-3, August 27–30, Bath, UK, 2003, S. 29–33.
- [162] *Schramm, H., Kaspereit, M., Kienle, A., und Seidel-Morgenstern, A.*: Verbesserung der Trennleistung von Simulated Moving Bed Prozessen durch zyklische Modulation der Feedkonzentration. Proc. GVC annual meeting, FRG, September 16–18, Mannheim, 2003, S. 1170–1171.
- [163] *Schramm, H., Kaspereit, M., Kienle, A., und Seidel-Morgenstern, A.*: SMB chromatography with periodically modified feed concentrations. Proc.ACHEMA, FRG, May 19–24, Frankfurt am Main, 2003, S. 73.
- [164] *Waschler, R., Angeles-Palacios, O., Ginkel, M., und Kienle, A.*: Application of the Process Modeling Tool ProMoT to large-scale chemical engineering processes. Proc. Proceedings 4th MATHMOD, IMACS Symposium on Mathematical Modelling, February 5–7, 2003, Volume 2 of *ARGESIM Report no. 24*, ISBN 3-901608-24-9, Vienna University of Technology, Vienna, Austria 2003, S. 1113–1121.

- [165] *Waschler, R., Angeles-Palacios, O., Ginkel, M., und Kienle, A.*: Flexible Modellierung großchemischer Anlagen mit dem Modellierungswerkzeug ProMoT. Proc. 17. Symposium Simulationstechnik, ASIM 2003, 16-19 May, Magdeburg, Germany (Hrsg.: Hohmann, R.), SCS Publishing House, Erlangen 2003, S. 173–178.
- [166] *Waschler, R., Zeyer, K. P., und Kienle, A.*: Nonlinear Analysis of Reactor Separator Systems Involving an Evaporatively Cooled Reactor. Proc. AIChE 2003 Annual Meeting Conference Proceedings, Paper 439p, November 16-21, American Institute of Chemical Engineers. 2003. ISBN 0-8169-0941-5.
- [167] *Zeyer, K. P., Pushpavanam, S., und Kienle, A.*: Nonlinear behavior of reactor separator networks: Influence of separator control structure. Proc. 4th European Congress of Chemical Engineering, ECCE-4, September 20–26, Granada, Spain, 2003.
- [168] *Grüner, S., Schwarzkopf, S., Disli-Uslu, I., und Kienle, A.*: Nonlinear model predictive control of multi-component distillation columns using wave models. Proc. 7th International Symposium on Advanced Control of Chemical Processes, ADECHEM, 11-14 January 2004, Hong Kong (Hrsg.: Allgower, F. und Furong Gao), Hong Kong University of Science and Technology, Clear Water Bay. 2004, S. 231–236.
- [169] *Heidebrecht, P., Mangold, M., Gundermann, M., Kienle, A., und Sundmacher, K.*: Modeling, Simulation and Optimization of a Cross Flow Molten Carbonate Fuel Cell. Proc. AIChE Annual Meeting, November 7-12, Austin, Texas, USA, 2004. paper 26e.
- [170] *Heidebrecht, P., Mangold, M., Kienle, A., und Sundmacher, K.*: Conceptual design of internal reforming in high temperature fuel cells. Proc. International Max Planck Symposium on Integrated Chemical Processes, March 22-24, Magdeburg, Germany, 2004.
- [171] *Zeyer, K. P., Kulkarni, A. A., und Kienle, A.*: Nonlinear Dynamics in Reactor Separator Systems. Proc. 16th International Congress of Chemical and Process Engineering, CHISA, August 22-26, Prague, Czech Republic, 2004. paper 0312.
- [172] *Gangadwala, J., Kienle, A., Haus, U.-U., Michaels, D., und Weismantel, R.*: Optimal Process Design for the Synthesis of 2,3-Dimethylbutene-1. Proc. European Symposium on Computer Aided Process Engineering - 15 (Hrsg.: Puigjaner, L. und Espuña, A.), Elsevier. 2005, S. 847–852.
- [173] *Häfele, M., Disli-Uslu, I., Kienle, A., Krishna, V. M., Pushpavanam, S., und Schmidt, C.-U.*: Nonlinear Behaviour of a Low-Density Polyethylene Tubular Reactor-Separator-Recycle System. Proc. European Symposium on Computer Aided Process Engineering - 1 (Hrsg.: Puigjaner, L. und Espuña, A.), Elsevier. 2005, S. 1423–1428.
- [174] *Kienle, A. und Grüner, S.*: Equilibrium theory and nonlinear waves for reaction separation processes. In: Integrated Chemical Processes (Hrsg.: Sundmacher, K., Kienle, A., und Seidel-Morgenstern, A.), Wiley VCH, Weinheim 2005, S. 149–181.
- [175] *Krasnyk, M., Ginkel, M., Mangold, M., und Kienle, A.*: Numerical Analysis of Higher-Order Singularities in Complex Chemical Process Models in ProMoT. Proc. European Symposium on Computer Aided Process Engineering - 15 (Hrsg.: Puigjaner, L. und Espuña, A.), Elsevier. 2005, S. 223–228.
- [176] *Mangold, M., Grötsch, M., Sheng, M., und Kienle, A.*: State Estimation of a Molten Carbonate Fuel Cell by an Extended Kalman Filter. Proc. Symposium on Nonlinear Control and Observer Design : From Theory to Application (Hrsg.: Meurer, T., Graichen, K., und Gilles, E. D.), Volume 322, Springer, Berlin, Germany 2005, S. 93–109.
- [177] *Mangold, M., Krasnyk, M., Kienle, A., und Sundmacher, K.*: Instabilities in high-temperature fuel cells due to combined heat and charge transport. In: Integrated Chemical Processes (Hrsg.: Sundmacher, K., Kienle, A., und Seidel-Morgenstern, A.), Wiley VCH, Weinheim 2005, S. 69–84.

- [178] *Radichkov, R., Heinrich, S., Kienle, A., Müller, T., Peglow, M., und Mörl, L.:* Nichtlineare Dynamik der kontinuierlichen Wirbelschicht-Sprühgranulation. *Chemie-Ingenieur-Technik* 8 (2005), S. 1010–1011.
- [179] *Radichkov, R., Kienle, A., Heinrich, S., Müller, T., Peglow, M., und Mörl, L.:* A theoretical analysis of oscillations and dynamic instabilities in continuous fluidized bed spray granulation. *Proc. 3rd Nordic Drying Conference*, 15-17 June 2005, Karlstad, Sweden, 2005.
- [180] *Gangadwala, J., Radulescu, G., Kienle, A., Steyer, F., und Sundmacher, K.:* New process for recovery of acetic acid from waste water. *Proc. 17th International Congress of Chemical and Process Engineering, CHISA*, August 27-31, Prague, Czech Republic, Prague 2006, S. paper H 4.4.
- [181] *Grötsch, M., Mangold, M., Sheng, M., und Kienle, A.:* State Estimation of a Molten Carbonate Fuel Cell by an Extended Kalman Filter. *Proc. 16th European Symposium on Computer Aided Process Engineering and 9th International Symposium on Process Systems Engineering* (Hrsg.: Marquardt, W. und Pantelides, C.), Elsevier, Amsterdam 2006, S. 1161–1166.
- [182] *Haus, U. U., Gangadwala, J., Kienle, A., Michaels, D., Seidel-Morgenstern, A., und Weismantel, R.:* Global bounds on optimal solutions in chemical process design. *Proc. 16th European Symposium on Computer Aided Process Engineering (ESCAPE 16)*, July 9-13, Garmisch-Partenkirchen, Germany, Elsevier, Amsterdam 2006, S. 155–160.
- [183] *Krasnyk, M., Bondareva, K., Milokhov, O., Teplinskiy, K., Ginkel, M., und Kienle, A.:* The Pro-MoT/Diana Simulation Environment. *Proc. 16th European Symposium on Computer Aided Process Engineering and 9th International Symposium on Process Systems Engineering* (Hrsg.: Marquardt, W. und Pantelides, C.), Elsevier, Amsterdam 2006, S. 445–450.
- [184] *Kulkarni, A. A., Zeyer, K. P., Jacobs, T., und Kienle, A.:* Studies of Homogeneously and Heterogeneously Catalyzed Liquid Phase Reactions in Micro Systems with Application to Esterification. *Proc. IChemE 2006, 28th International Exhibition-Congress on Chemical Engineering, Environmental Protection and Biotechnology*, 15 - 19 Mai, Frankfurt am Main, Lecture group Microchemical Engineering, page 48, paper 1351, 2006.
- [185] *Radulescu, G., Gangadwala, J., Kienle, A., Steyer, F., und Sundmacher, K.:* Dynamic simulation of reactive distillation processes with liquid-liquid phase splitting. *Proc. The 5th International Symposium on Process Control*, May 17-19, Ploiesti, Romania, 2006.
- [186] *Gangadwala, J., Radulescu, G., Paraschiv, N., Kienle, A., und Sundmacher, K.:* Dynamics of reactive distillation processes with potential liquid phase splitting. *Proc. 17th European Symposium on Computer Aided Process Engineering - ESCAPE-17* (Hrsg.: Plesu, V. und Agachi, P.), Volume 24, Elsevier, Amsterdam 2007, S. 213–218.
- [187] *Grötsch, M., Mangold, M., Sheng, M., und Kienle, A.:* Model reduction and state estimation. In: *Molten Carbonate Fuel Cells. Modeling, Analysis, Simulation, and Control* (Hrsg.: Sundmacher, K., Kienle, A., Pesch, H. J., Berndt, J., und Huppmann, G.), Wiley-VCH 2007, S. 185–200.
- [188] *Jacobs, T., Gomide, A., Kaspereit, M., Zeyer, K. P., Kienle, A., und Hauptmann, P.:* In-line analysis of chemical reactions in micro reactors using thermal mass flow sensors. *Proc. IEEE Eurocon Catalog*, Number: 07EX1617C, Warschau, Polen, 9 - 12 September, 2007, S. 571–574.
- [189] *Krasnyk, M., Mangold, M., und Kienle, A.:* Numerical bifurcation analysis of periodic solutions of population balance models. *Proc. 2007 AIChE Annual Meeting*, November 4 - 9, Salt Lake City, USA, 2007.

- [190] *Krasnyk, M., Mangold, M., Kienle, A., und Sundmacher, K.*: Hot spot formation and steady state multiplicities. In: *Molten Carbonate Fuel Cells. Modeling, Analysis, Simulation, and Control* (Hrsg.: Sundmacher, K., Kienle, A., Pesch, H. J., Berndt, J., und Huppmann, G.), Wiley-VCH 2007, S. 141–163.
- [191] *Zeyer, K. P., Kulkarni, A. A., Kienle, A., Mantravadi, V. K., und Pushpavanam, S.*: Nonlinear behavior of reactor-separator and reactor-distillation networks: Influence of the energy balance formulation. *Proc. 17th European Symposium on Computer Aided Process Engineering - ESCAPE-17* (Hrsg.: Plesu, V. und Agachi, P. S.), Volume 24, Elsevier, Amsterdam 2007, S. 425–430.
- [192] *Dosta, M., Mangold, M., Kienle, A., und Svjatnyj, V.*: Parallel simulation of a molten carbonate fuel cell system. *Proc. 18th European Symposium on Computer Aided Process Engineering - ESCAPE-18* (Hrsg.: Braunschweig, B. und Joulia, X.), Volume 25, Elsevier, Amsterdam 2008. ISBN 978-0-444-53228-2.
- [193] *Jach, M., Kienle, A., Michaels, D., und Weismantel, R.*: Novel convex underestimators and their application to the synthesis of combined reaction distillation processes. *Proc. 18th European Symposium on Computer Aided Process Engineering - ESCAPE-18* (Hrsg.: Braunschweig, B. und Joulia, X.), Volume 25, Elsevier, Amsterdam 2008. ISBN 978-0-444-53228-2.
- [194] *Jacobs, T., Kaspereit, M., Zeyer, K. P., Kienle, A., und Hauptmann, P.*: Thermal Mass Flow Sensors for Monitoring Esterification Reactions in Residence Time Micro Reactors. *Proc. AIChE Spring National Meeting 2008, Paper 209h, New Orleans, USA, 6 - 10 April, 2008.*
- [195] *Jacobs, T., Kaspereit, M., Zeyer, K. P., Kienle, A., und Hauptmann, P.*: Thermal Flow Sensor Network for Real-Time Kinetic Analysis of Chemical Reactions in Micro Reactors. *Proc. Eurosensors 2008 (Eurosensors XXII), September 7 - 10, Dresden, Germany, 2008, S. 777–780.* ISBN: 978-3-00-025217-4.
- [196] *Kaspereit, M., García-Palacios, J., Meixús-Fernández, T., und Kienle, A.*: Systematic Design of Production Processes for Enantiomers with Integration of Chromatography and Racemisation Reactions. *Proc. 18th European Symposium on Computer Aided Process Engineering - ESCAPE-18, 1-4 June* (Hrsg.: Braunschweig, B. und Joulia, X.), Volume 25, Elsevier, Amsterdam 2008, S. 97–102. ISBN 978 0 444 53227 5.
- [197] *Kaspereit, M., Seidel-Morgenstern, A., und Kienle, A.*: Zur Integration von chromatographischen Verfahren und Racemisierungsreaktionen zur Herstellung reiner Enantiomere, Bingen am Rhein, Germany, 13-14 march. *Proc. Jahrestreffen der ProcessNet-Fachausschüsse Adsorption und Fluidverfahrenstechnik*, 2008.
- [198] *Müller, T., Schulze-Horsel, J., Sidorenko, Y., Reichl, U., und Kienle, A.*: Population balance modeling of influenza virus replication in MDCK cells during vaccine production. *Proc. 18th European Symposium on Computer Aided Process Engineering - ESCAPE-18* (Hrsg.: Braunschweig, B. und Joulia, X.), Volume 25, Elsevier, Amsterdam 2008, S. 133–138. ISBN 978 0 444 53227 5.
- [199] *Disli, I. und Kienle, A.*: Dynamic Modeling and Simulation of Low Density Polyethylene Production - A Comparative Study. *Proc. Mathmod 2009 - 6th Vienna International Conference on Mathematical Modelling, 11-13 February, Wien, Österreich* (Hrsg.: Troch, I. und Breitenecker, F.), 2009, S. 2372–2378. ISBN: 978-3-901608-35-3.
- [200] *Disli, I., Kremling, A., und Kienle, A.*: A model based analysis of multiple steady states in continuous cell cultures. *Proc. Mathmod 2009 - 6th Vienna International Conference on Mathematical Modelling, 11-13 February, Wien, Österreich* (Hrsg.: Troch, I. und Breitenecker, F.), 2009, S. 796–804. ISBN: 978-3-901608-35-3.

- [201] *Franz, A., Song, H.-S., Ramkrishna, D., und Kienle, A.*: Modeling of PHB Synthesis and Degradation in Microorganisms Using the Hybrid Cybernetic Approach. Proc. AIChE Ann. Meeting, 8 - 13 November, Nashville, Tennessee, USA, 2009. paper 182e.
- [202] *Jacobs, T., Kutzner, C., Kropp, M., Brokmann, G., Lang, W., Steinke, A., Kienle, A., und Hauptmann, P.*: Novel Impedimetric and Perforated Thermal Flow Sensor for Inline Chemical Process Analysis in Micro Residence Time Reactors. Proc. Proceedings of the 8th IEEE Sensors Conference, 2009, S. 719–722.
- [203] *Kaspereit, M., Palacios, J. G., Swernath, S., und Kienle, A.*: Optimierungs-basierte Synthese und Auslegung von Prozessen zur Herstellung reiner Enantiomere. Chemie-Ingenieur-Technik 82 (2010), S. 1430.
- [204] *Mangold, M. und Kienle, A.*: Regelung von Brennstoffzellensystemen. In: Jahresbericht 2010, Max-Planck-Gesellschaft 2010.
- [205] *Palis, S. und Kienle, A.*: Stabilization of a continuous fluidized bed spray granulation. Proc. 4th International Conference on Population Balance Modelling - PBM2010, 15-17 September 2010, Berlin, Germany, 2010, S. 87–97.
- [206] *Palis, S. und Kienle, A.*: Stabilization of Continuous Fluidized Bed Spray Granulation - a Lyapunov Approach. Proc. NOLCOS 2010. 8th IFAC Symposium on Nonlinear Control Systems, September 1-3, 2010, Bologna, Italy., 2010.
- [207] *Paramasivan, G. und Kienle, A.*: A reactive distillation case study for decentralized control system design using mixed integer optimization. Proc. 20th European Symposium on Computer Aided Process Engineering, June 6-9, 2010, Naples, Italy (Hrsg.: Pierucci, S. und Buzzi Ferraris, G.), Volume 20 of *Escape*, Elsevier B.V. 2010, S. 565–570.
- [208] *Paramasivan, G. und Kienle, A.*: Decentralized control system design using mixed integer optimization. Proc. 2nd International Conference on Engineering Optimization, September 6-9, Lisbon, Portugal (Hrsg.: Rodrigues, H. und Herskovits, J.), 2010, S. 319.
- [209] *Sommer, S., Böhm, J., und Kienle, A.*: Energy management for heat intensive production plants using mixed integer optimization. Proc. 20th European Symposium on Computer Aided Process Engineering, June 6-9, 2010, Naples, Italy (Hrsg.: Pierucci, S. und Buzzi Ferraris, G.), Volume 20 of *Escape*, Elsevier B.V. 2010, S. 877–882.
- [210] *Swernath, S., Kaspereit, M., und Kienle, A.*: MINLP optimization of process combinations for the production of pure enantiomers. Proc. CHISA 2010 ECCE 7 Summaries 3, August 28 - September 1, 2010, Prague, Czech Republic, 28/8/2010 2010, S. 821–822. Sequence no. F6.2.
- [211] *Swernath, S., Kaspereit, M., und Kienle, A.*: Economical Optimization of Process Combinations Based on SMB Chromatography for the Production of Pure Enantiomers. Proc. SPICA 2010, 13th International Symposium on Preparative and Industrial Chromatography and Allied Techniques, 2010, S. 109.
- [212] *Ballerstein, M., Kienle, A., Kunde, C., Michaels, D., und Weismantel, R.*: Towards global optimization of combined distillation-crystallization processes for the separation of closely boiling mixtures. Proc. 21st European Symposium on Computer Aided Process Engineering, May 29 - June 1, 2011, Chalkidiki, Greece (Hrsg.: Pistikopoulos, E. N., Georgiadis, M. C., und Kokossis, A. C.), Volume 29 of *Computer-Aided Chemical Engineering*, Elsevier. 2011, S. 552–556. ISBN: 978-0-444-53711-9.

- [213] Müller, T., Dürr, R., Isken, B., Schulze-Horsel, J., Reichl, U., und Kienle, A.: Population balance modelling of influenza virus replication during vaccine production - Influence of apoptosis. Proc. 21st European Symposium on Computer Aided Process Engineering, May 29 - June 1, 2011, Chalkidiki, Greece (Hrsg.: Pistikopoulos, E. N., Georgiadis, M. C., und Kokossis, A. C.), Volume 29 of *Computer-Aided Chemical Engineering*, Elsevier. 2011, S. 1336–1340. ISBN: 978-0-444-53895-6.
- [214] Dürr, R., Müller, T., Isken, B., Schulze-Horsel, J., Reichl, U., und Kienle, A.: Distributed Modeling and Parameter Estimation of Influenza Virus Replication During Vaccine Production. Proc. MATHMOD 2012 - Full Paper Preprint Volume (Hrsg.: F. Breitenecker, I. T.), 2012.

Patentanmeldungen

- [215] Schramm, H., Kienle, A., Kaspereit, M., und Seidel-Morgenstern, A.: Verfahren zur chromatographischen Trennung von Komponenten. 2002. German patent application DE 102 35 385.9.
- [216] Stein, E., Kienle, A., und Sundmacher, K.: Verfahren zur Abtrennung mindestens einer reaktiven Komponente aus flüssigen Stoffgemischen und Vorrichtung zur Durchführung dieses Verfahrens. International Patent Application PCT WO 02/40128 A2. 2002.