

CONTENTS

J. Bałdyga, M. Jasinska: Flow Structure, Drop Deformation and Mass Transfer in Dense Emulsions.....	3
D. Boron, J. Szyman: A Comparison of Hydrodynamic Models of Different Hybrid, Fluidised-Bed Bioreactors	15
L. Böhm, M. Kolano, M. Kraume: Simulation of the Single Bubble Ascent with OpenFOAM.....	25
M. Bremer, M. Kraume: Experimental Study to Develop a Control System for Submersible Mixers in Biogas Plants.....	33
G. Brösigke, A. Hertel, M. Rädle, J.-U. Repke: Analysis of the Influence of Turbulence on the Heat Transfer Between Spherical Particles and Planar Surfaces	43
T. Budiarso, E. Esche, J.-U. Repke: Dynamic Modeling and Operation of the Chlor-Alkali Process	53
A. Celarek, S. Kuciel: An Evaluation of the Changes to the Mechanical Properties of Polymer Biocomposites Resulting from their Long-Term Storage at Low Temperatures.....	67
P. Cyklis, P. Mlynarczyk: CFD Impulse Flow Simulation Through Shaped Nozzles	75
P. Ditz, R. Šulc: Dispersion Kinetics Modelling	83
M. Fechter, M. Kraume: Digestate Treatment Techniques.....	95
M. Illner, T. Pogrzeba, M. Schmidt, D. Müller, E. Esche, R. Schomäcker, J.-U. Repke, G. Wozny: Hydroformylation of 1-Dodecene in Microemulsions: Operation and Validation of Lab Results in a Miniplant	107
R. Kantor, P. Mlynarczyk: Water Jackets as Efficient Heat Shields in High Temperature Difference Cases – CFD Modelling of Convective and Radiative Heat Transfer in Vacuum Systems	121
M. Kolano, M. Bremer, M. Kraume: Numerical Simulation of Viscoelastic Fluid Flow in Stirred Vessels.....	129
B. Larwa, K. Kupiec, T. Komorowicz, M. Gwadera, M. Teper: Modelling of Heat Transfer in Ground Heat Exchangers	141
M. Netušil, P. Ditz: Automotive Catalyst Production – Challenges for Chemical Engineers	151
P.D. Pastuszak, K. Nering: An Evaluation of Delamination in Composite Structures by Cooling Down Thermography (CDT): Numerical Studies.....	161
S. Pater, J. Magiera, W. Ciesielczyk: Hybrid Heating and Cooling System with Renewable Energy Sources.....	171
A. Penteado, E. Esche, D. Salerno, H.R. Godini, J.-U. Repke, G. Wozny: The Systematic Design of CO ₂ Capture Processes Applied to the Oxidative Coupling of Methane	183

K. Rup, A. Drózdź: Numerical Modeling of the Pulse Wave Propagation in Human Thoracic Aorta	195
A.B. Sitanggang, A. Drews, M. Kraume: Automated Membrane Reactors for the Early Process Development of Enzyme Promoted Bioconversion.....	205
J. Stacharska-Targosz, K. Nering: Analysis of Pressure Losses in the Cross Flow Fan Heat Exchanger at Various Thermal and Flow Conditions	213
D. Szwabowski, A. Ganczarski: Concept of Quasi-Micropolar Fluid Model.....	223
D. Taler, K. Kaczmarski: A Numerical Model of Transient Pipeline Operation	231
R. Wilhelm, E. Esche, Z. Guetta, H. Thielert, G. Wozny, J.-U. Repke, A. Penteado: Mobile Pilot-Plant for the Evaluation of Novel Scrubbing Liquids for the Absorption of CO ₂ from Industrial Gases.....	243