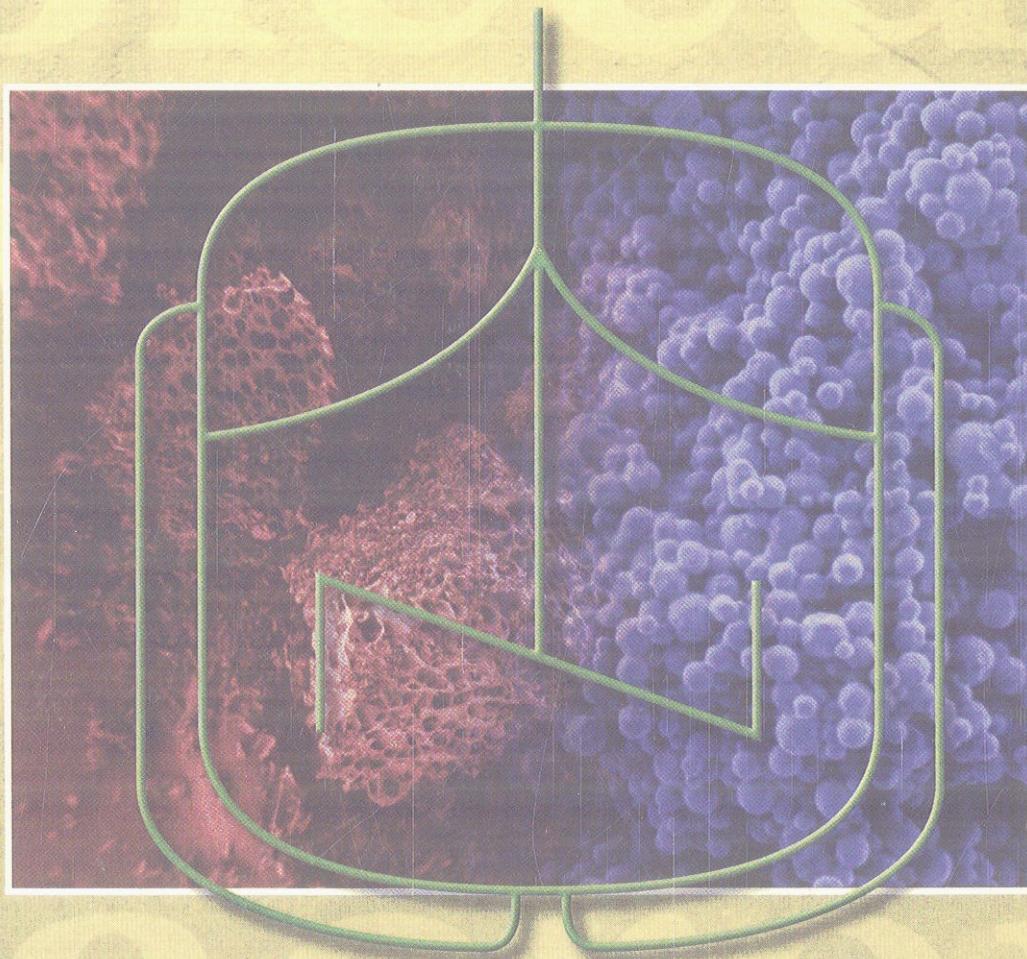


H.-U. Moritz, W. Pauer (Eds.)

Polymer Reaction Engineering – 9th International Workshop



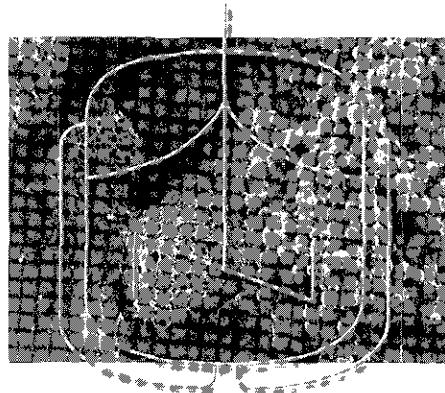
Macromolecular Symposia: Vol. 259

Articles published on the web will appear
several weeks before the print edition.
They are available through:



www.interscience.wiley.com

Cover: The picture on the cover is based on the article by M. Morbidelli et al. (p. 218), and shows SEM photographs of PMMA samples.



Polymer Reaction Engineering - 9th International Workshop

University of Hamburg (Germany)
Dedicated to Prof. Heinz Gerrens

Preface

Miniemulsification: An Analysis of the Use of Rotor Stators as Emulsification Devices | 1

New Falling Film Reactor for Melt Polycondensation Process | 10

Recent Advances in Modern Static Devolatilization | 17

H.-U. Moritz, W. Pauer

Ula El-Jaby,
Timothy F. L. McKenna,*
Michael F. Cunningham

Zhenghao Xi,
Ling Zhao,* Zhaoyan Liu

Manfred Wäckerlin,
Philip Nising*

Process Intensification of Emulsion Polymerization in the Continuous *Taylor Reactor*

Dana Rüttgers,*
Iuliana Negoita,*
Werner Pauer,
Hans-Ulrich Moritz

| 26

Characterization of Mixing Efficiency in Polymerization Reactors Using Competitive-Parallel Reactions

Kathrin Kunowa,*
Sebastian Schmidt-Lehr,*
Werner Pauer,
Hans-Ulrich Moritz,
Christian Schwede

| 32

Model Based Operation of Polymer Processes – What has to be Done?

Jens Bausa

| 42

Development and Modeling of a Continuous Dispersion Copolymerization Process in the Presence of a Stabilizing Agent Elaborated *in situ*

Fernand Pla,*
Christian Fonteix,
Sandrine Hoppe,
Cornelius Schrauwen,
Hanno Van der Wal,
Freddy Van Damme

| 53

Influence of Reaction Pressure on Semibatch Esterification Process of Poly(ethylene terephthalate) Synthesis

Himanshu Patel,*
Gunter Feix,
Reinhard Schomäcker

| 65

Modeling Nd-Catalyzed Butadiene Rubber Production

Ursula Tracht,*
Heike Kloppenburg

| 76

Design of Blends with an Extremely Low Viscosity Ratio between the Dispersed and Continuous Phases. Dependence of the Dispersed Phase Size on the Processing Parameters

Jonathan Leblanc,
Mathilde Mercier,
Christian Fonteix,
Fernand Pla*

| 85

Model Development in Thermal Styrene Polymerization

Bryan Matthews,
Carlos Villa,* Pete Pierini

| 94

Estimation of Kinetic Parameters for the Polar-Modified Anionic Solution Copolymerization of 1,3-Butadiene and Styrene

W. Carl McIntosh,*
Evemarie Hamann,
Ronald Oertel,
Michael Bartke

| 102

Steady State Simulation of Ethylene Polymerization Using Multiple-Site Coordination Catalysts

Francisco Pérez Valencia,*
Joao B.P. Soares

| 110

Modeling Polycondensation of Lactic Acid

Yogesh M. Harshe,*
Giuseppe Storti,
Massimo Morbidelli,*
Simone Gelosa,
Davide Moscatelli

| 116

Time Programmed Feed of Semi-Batch Reactors with Non-Linear Radical Copolymerizations: An Experimental Study of the System Styrene + Divinylbenzene Using SEC/MALLS

Fluidized Bed Polyethylene Reactor Modeling in Condensed Mode Operation

Composite Polymer Nanoparticles via Transitional Phase Inversion Emulsification and Polymerization

Semibatch Atom Transfer Radical Copolymerization of Styrene and Butyl Acrylate

A Novel Production Route for Nylon-6: Aspects of Catalysis and Process Development

Ethylene/1-Butene Copolymerization over Heterogeneous Metallocene Catalyst

Fe^{2+} Catalyzed Synthesis of Radiation Grafted Functional Membranes and Application in Fuel Cells and Ion Recovery

Kinetic Studies of Polyethylene Terephthalate Synthesis with Titanium-Based Catalyst

Sorption and Swelling of Poly(D,L-lactic acid) and Poly(lactic-co-glycolic acid) in Supercritical CO_2

Miguel A. D. Gonçalves,
Rolando C. S. Dias,
Mário Rui P. F. N. Costa*

Ahmad Mirzaei,*
Ali Kiashemshaki,
Mehrsa Emami

Fatemeh Jahanzad,
Gini Chauhan,
Sherif Mustafa,
Basu Saha,
Shahriar Sajjadi,
Brian W. Brooks*

Yao Fu,
Michael F. Cunningham,*
Robin A. Hutchinson*

J. Meuldijk,*
A. J. M. van Dijk,
R. Duchateau,
C. E. Koning

Rafael van Grieken,*
Carlos Martín,
Jovita Moreno,
Oscar Prieto,
Jose M. Bravo

Christian Schmidt,
Gudrun Schmidt-Naake*

Fatemeh Ahmadnian,*
Karl-Heinz Reichert

Ronny Pini,
Giuseppe Storti,
Marco Mazzotti,*
Hongyun Tai,
Kevin M. Shakesheff,
Steven M. Howdle

| 124

| 135

| 145

| 151

| 164

| 174

| 181

| 188

| 197

Poly(propylene carbonate), old CO₂
Copolymer with New Attractiveness

Gerrit A. Luijstra,*
Ferenc Molnar

| 203

Homogeneous Phase Polymerization of
Vinylidene Fluoride in Supercritical CO₂:
Surfactant Free Synthesis and Kinetics

Sabine Beuermann,*
M. Imran-ul-haq

| 210

Dispersion Polymerization of Methyl
Methacrylate in Supercritical Carbon
Dioxide: Control of Molecular Weight
Distribution by Adjusting Particle Surface
Area

Philipp A. Mueller,
Giuseppe Storti,
Massimo Morbidelli,*
Charalampos A. Mantelis,
Thierry Meyer

| 218

Ionic Liquids - New Solvents in the Free
Radical Polymerization

Gudrun Schmidt-Naake,*
Inga Woehrt,
Anne Schmaljusß

| 226

Phase-Equilibrium Measurements of the
Polystyrene/Styrene/Carbon Dioxide
Ternary System at Elevated Pressures
Using ATR-FTIR Spectroscopy

Michael Görnert,
Gabriele Sadowski*

| 236

Effect of 1-Hexene Comonomer on
Polyethylene Particle Growth and Kinetic
Profiles

Rafael van Grieken,*
Alicia Carrero,
Inmaculada Suarez,
Beatriz Paredes

| 243

Adaption of the Mechanism of Emulsion
Polymerization to New Experimental
Results

Klaus Tauer,*
Hugo F. Hernández,
Steffen Kozempel,
Olga Lazareva,
Pantea Nazaran

| 253

Nucleation in Emulsion Polymerization:
Another Step towards Non-Micellar
Nucleation Theory

Pantea Nazaran,*
Klaus Tauer

| 264

Brownian Dynamics Simulation Studies on
Radical Capture in Emulsion
Polymerization

Hugo F. Hernández,*
Klaus Tauer

| 274

Kinetic Study of the Copolymerization of
Ethylene with a Single Site Catalyst in
Propane Slurry Polymerization

Sebastian Kröner,*
Kirsti Eloranta,
Michiel F. Bergstra,
Michael Bartke

| 284

Modeling the Chain-Length Differentiated Polymer Microstructure of α -Olefins

Markus Busch,
Katrin Becker*

| 295

High-Solids Content Waterborne Polymer-Clay Nanocomposites

*Gabriela Diaconu,
José M. Asua,
Maria Paulis,
Jose R. Leiza**

| 305

A Study of L-Lactide Ring-Opening Polymerization Kinetics

Jean-Pierre Puaux,
Ionut Banu,
Iosif Nagy,
Grigore Bozga*

| 318

Sorption and Diffusion of Propylene and Ethylene in Heterophasic Polypropylene Copolymers

Michael Bartke,
Sebastian Kröner,
Annette Wittebrock,
Karl-Heinz Reichert,
Ilias Iliopoulos,
Christoph Johannes
Dittrich*

| 327

Ab Initio Calculation of the Propagation Kinetics in Free Radical Polymerization: Chain Length and Penultimate Effects

Davide Moscatelli,
Marco Dossi,
Carlo Cavallotti,
Giuseppe Storti*

| 337

Temperature and pH Dependency of Copolymerization Parameters of Acrylic Acid and 2-Hydroxypropyl Acrylate

Christoph Blaszk,
Jan Grünitz,
Maike Möller,
Werner Pauer,
Hans-Ulrich Moritz,
Christian Schwede*

| 348

Mathematical Modeling of the Grafting of Maleic Anhydride onto Polypropylene

Reinaldo Giudici

| 354

Reaction Inhibition as a Method for Preventing Thermal Runaway in Industrial Processes

*Alessandra Russo,
Giuseppe Maschio,*
Claudio Ampelli*

| 365

Advanced Calorimetric Techniques in Polymer Engineering

Jean-Pierre E. Grolier,
Florin Dan*

| 371

Comparing Methods for Calculating the Heat Flow Rate of Reactions in Different Bench-Scale Calorimeters

Arnd-Lüder Gaulke,
Werner Pauer,
Hans-Ulrich Moritz*

| 381

Online-Analysis on Acoustically Levitated
Droplets

Silke Biedasek,
Mohammed Abboud,
Hans-Ulrich Moritz,
Achim Stammer*

| 390

RAFT Polymerization - Investigation of
the Initialization Period and
Determination of the Transfer Coefficients

Marco Drache,
Gudrun Schmidt-Naake*

| 397

Molecular Weight Control in Emulsion
Polymerization by Catalytic Chain
Transfer: A Reaction Engineering
Approach

*Niels M.B. Smeets,
Ujwal S. Meda,
Johan P.A. Heuts,
Jos T.F. Keurentjes,
Alex M. van Herk,
Jan Meuldijk**

| 406

Analysis of Nitroxide-Mediated
Polymerization of Styrene by Soft-
Ionization-MS – A Challenging Task

*Wibke Dempwolf,
Silke Flakus,
Gudrun Schmidt-Naake**

| 416

What Kind of Image is Drawn by a
MALDI-Experiment of Grafted
Nanoparticles? - How to Distinguish
between Chemically and Physically
Adsorbed Parts

*Wibke Dempwolf,
Lars Nothdurft,
Gudrun Schmidt-Naake**

| 421