

The SPE Guide on Extrusion Technology and Troubleshooting

A Compendium by Industry Experts

The Society of Plastics Engineers is pleased to sponsor the first in its technical Division series, *The SPE Guide on Extrusion Technology and Troubleshooting*. This technical volume provides the most comprehensive treatment of the extrusion process and troubleshooting in a single source to date. Extrusion Division members championed the development of this invaluable resource.

Written by prominent experts selected by SPE's Extrusion Division, this ambitious compendium focuses on the understanding of the fundamental factors of extrusion and related topics. The outstanding organization, breadth and in-depth presentation reflect the extensive backgrounds of the authors, whose technical competence pervades all SPE activities, not only in publication of books but also in other activities such as technical conferences and educational programs. Both distinguished and eminently qualified technical editors, Mr. John Wagner and Dr. John Vlachopoulos are SPE Fellows and Extrusion Division board members.

This 400 page fact-filled guide provides an understanding of extrusion technology, downstream processes and common technologies. It offers detailed information on numerous innovations, advances and technological developments. With its chapters on troubleshooting methodology and tools, performance characterization, good extrusion practices plus the troubleshooting guides, one gains an insight into the art of problem solving.

The numerous chapter troubleshooting tables will benefit everyone involved in extrusion, whether it's for solving day-to-day production problems or long-term upgrading of extrusion operations. The intent is to provide an intermediate text on extrusion technology for the practitioner, while presenting beginning students of plastic technologies with solid, concentrated introductory material.

The SPE Guide on Extrusion Technology and Troubleshooting is divided into three parts, complemented with essential material in the appendices:

- ◆ Extrusion Technology
- ◆ Downstream Processes and Applications
- ◆ Common Technologies
- ◆ Appendices

Troubleshooting guides, at the end of each chapter, are invaluable resources that provide solutions to common problems with both short-term and long-term suggestions on how to correct problems.

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SPE Division Series

Society of Plastics Engineers

The SPE Guide on Extrusion Technology And Troubleshooting

INTRODUCTION

Troubleshooting Methodology and Tools

Russ Gould

PART I EXTRUSION TECHNOLOGY

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2. Twin Screw Extruders

Charlie Martin

3. Alternate Extrusion Systems

Allan Griff

4. Extrusion Control

Tim Fisher

5. Auxiliary Systems

Melt Pumps

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Filtration

Dan Smith

Polymer Drying

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Resin Conveying Systems

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Volumetric and Gravimetric Blending

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Mark Spalding, Kun Sup Hyun,
John Vlachopoulos

7. Performance Characterization

John R. Wagner, Jr.

8. Computer Aided Analysis and Design

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Twin Screw David Todd

Pelletizing Chris Case

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Allan Griff

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Appendix 2 – Unit conversion factors

Appendix 3 – Useful equations

Appendix 4 – Useful web sites

Appendix 5 – Typical processing data

Appendix 6 – Author biographies

BEST FEATURES

- ◆ Extensive range of extrusion technologies
- ◆ Insight to troubleshooting methodology and tools
- ◆ Insight to the mixing process
- ◆ Practical guide on resin and rheology
- ◆ How to characterize performance
- ◆ Good extrusion practices
- ◆ Troubleshooting guides
- ◆ Written by industry experts
- ◆ Technically edited by prominent extrusion professionals

WHO WILL BENEFIT FROM USING THIS GUIDE

- ◆ **Plastics process and design engineers**
Engineers will be able to refresh their knowledge of extrusion technology.
- ◆ **Equipment operators**
Equipment operators will gain an understanding of the fundamental processes involved.
- ◆ **Managerial personnel**
Managers will obtain an overview of the technical problems associated with plastics extrusion.
- ◆ **University/college professors**
Professors will be able to supplement their knowledge of the fundamental principles with practical know-how.
- ◆ **Students**
Students will find invaluable material on principles, applications and fundamentals.