

Contents, Volume 1

Preface	vii
Contributors, Volume 1	ix
Contents, Volume 2	xi
Contributors, Volume 2	xiii
1 Introduction	1
<i>D. R. Paul and C. B. Bucknall</i>	
THERMODYNAMICS	
2 Statistical Thermodynamics of Polymer Solutions and Blends	15
<i>I. C. Sanchez and M. T. Stone</i>	
3 Polymer–Polymer Interactions Based on Mean Field Approximations	55
<i>G. D. Merfeld and D. R. Paul</i>	
4 Hydrogen Bonding Systems	93
<i>P. C. Painter and M. M. Coleman</i>	
5 Polymer Blends as Viewed by Analogue Calorimetry	141
<i>C. J. T. Landry</i>	
6 Crystalline Polymer Blends	167
<i>J. P. Runt</i>	
7 Fundamentals of Blends of Rigid-Chain (Liquid Crystal) Polymers	187
<i>M. Ballauff and J. R. Dorgan</i>	
8 Thermodynamics of Polyolefin Blends	219
<i>D. J. Lohse and W. W. Graessley</i>	
CHARACTERIZATION	
9 Morphology Characterization by Microscopy Techniques	239
<i>S. Y. Hobbs and V. H. Watkins</i>	

10	Viscoelastic Characterization of Polymer Blends	291
	<i>D. S. Kalika</i>	
11	Optical Characterization: Light Scattering, Birefringence, and Ellipsometry	319
	<i>T. Inoue and T. Kyu</i>	
12	Neutron Scattering and Polymer Blends	349
	<i>D. G. Bucknall and V. Arrighi</i>	
STRUCTURE FORMATION		
13	Formulation and Characterization of Thermoset–Thermoplastic Blends	379
	<i>J. P. Pascault and R. J. J. Williams</i>	
14	Chemical Reactions in Blends Based on Condensation Polymers: Transreactions and Molecular and Morphological Characterization	417
	<i>G. Groeninckx, M. Sarkissova, and S. Thomas</i>	
15	Morphology and Properties of Blends Containing Block Copolymers	461
	<i>S. D. Hudson and A. M. Jamieson</i>	
16	Factors Influencing the Morphology of Immiscible Polymer Blends in Melt Processing	501
	<i>B. D. Favis</i>	
17	Reactive Compatibilization	539
	<i>B. Majumdar and D. R. Paul</i>	
18	Processing Aids	581
	<i>J. M. Brady and C. A. Cruz-Ramos</i>	
	Index	595

Contents, Volume 2

Preface	vii
Contributors, Volume 2	ix
Contents, Volume 1	xi
Contributors, Volume 1	xiii
MECHANICAL PROPERTIES AND FRACTURE RESISTANCE	
19 Quasielastic Mechanical Properties	1
<i>F. J. Guild</i>	
20 Application of Fracture Mechanics for Characterization of Toughness of Polymer Blends	17
<i>Y.-W. Mai, S.-C. Wong, and X.-H. Chen</i>	
21 Characterizing Toughness using Standard Empirical Tests	59
<i>C. B. Bucknall</i>	
22 Deformation Mechanisms in Rubber-Toughened Polymers	83
<i>C. B. Bucknall</i>	
23 Strengthening Polymer-Polymer Interfaces	119
<i>H. R. Brown</i>	
24 Core-Shell Impact Modifiers	137
<i>C. A. Cruz-Ramos</i>	
25 Toughening Semicrystalline Thermoplastics	177
<i>R. J. Gaymans</i>	
26 Toughening of Epoxies	225
<i>A. F. Yee, J. Du, and M. D. Thouless</i>	
27 Fatigue-Crack Propagation in Polymer Blends	269
<i>R. A. Pearson and L. Pruitt</i>	

BLENDING FOR SPECIFIC PERFORMANCE

- 28 Transmission and Reflection of Light in Multiphase Media** 301
R. Alexander-Katz

- 29 Thermomechanical Performance of Polymer Blends**
J. J. Scobbo, Jr.

- 30 Barrier Materials by Blending**
P. M. Subramanian and I. G. Plotzker

REINFORCED BLENDS

- 31 Reinforced Polymer Blends** 373
J. Karger-Kocsis

- 32 Liquid Crystalline Polymer Blends** 429
D. G. Baird and M. A. McLeod

- 33 From Polymer Blends to Microfibrillar Reinforced Composites** 455
S. Fakirov, M. Evstatiev, and K. Friedrich

ELASTOMERIC BLENDS

- 34 Elastomer Blends** 477
S. Datta

- 35 Thermoplastic Vulcanizates** 517
S. Abdou-Sabet and S. Datta

RECYCLING

- 36 Recycling of Polymer Blends and Mixtures** 557
T. S. Ellis

- Index** 583