

Contents

<i>Preface to the Second Edition</i>	v
<i>Preface to the First Edition</i>	vii
<i>Contributors</i>	xi

I. Additives and Stabilizers in Polymers

1. Polyolefin Stabilization: From Single Stabilizers to Complex Systems <i>François Louis Gugumus</i>	1
2. Greenhouse Film Stabilization <i>François Louis Gugumus</i>	39
3. Phosphite Stabilizers for Polymers: Performance and Action Mechanisms <i>Wolf D. Habicher and Ingmar Bauer</i>	81
4. Polymer-Processing Additives <i>Anand Kumar Kulshreshtha and Santosh Kumar Awasthi</i>	105
5. Permanence of UV Absorbers in Plastics and Coatings <i>James E. Pickett</i>	163
6. Highlights in the Inherent Chemical Activity of Polymer Stabilizers <i>Jan Pospíšil and Stanislav Nešpůrek</i>	191

II. Mechanisms of Polymer Degradation and Stabilization

7. Homogeneous and Heterogeneous Oxidation of Polypropylene <i>Graeme A. George and Mathew Celina</i>	277
8. New Mechanisms of Polymer Degradation <i>Yurii Arsenovich Mikheev, Ludmila Nikolaevna Guseva, and Guennadi Efremovich Zaikov</i>	315

III. Controlled Degradation and Stabilization

9. Polymer Oxidation and Antioxidant Action <i>Evguenii T. Denisov</i>	383
---	-----

10.	Biodegradation of Polymers in Historical Perspective Versus Modern Polymer Chemistry <i>Ann-Christine Albertsson</i>	421
11.	Assessment of Biodegradability in Organic Polymers <i>Anthony L. Andrady</i>	441
12.	Environmental Degradation of Polymers <i>Peter P. Klemchuk</i>	461
13.	Medical Polymers and Diagnostic Reagents <i>Naim Akmal and Arthur M. Usmani</i>	485
14.	Drug Release from Polymers: Quantitative Approach <i>Alexander Yakovlevich Polishchuk and Guennadi Efremovich Zaikov</i>	515
IV. Wavelength Sensitivity of Polymers		
15.	Wavelength Sensitivity of Photodegradation of Polymers <i>Ayako Torikai</i>	573
16.	Activation Spectra of Polymers and Their Application to Stabilization and Stability Testing <i>Norma D. Searle</i>	605
17.	Accelerated Weathering Test Design and Data Analysis <i>Richard M. Fischer and Warren D. Ketola</i>	645
18.	Fundamental and Technical Aspects of the Photooxidation of Polymers <i>Jean-Luc Gardette</i>	671
19.	Lifetime Prediction of Plastics <i>S. Halim Hamid and Ikram Hussain</i>	699
20.	Kinetic Modeling of Low-Temperature Oxidation of Hydrocarbon Polymers <i>Ludmila Audouin, Laurence Achimsky, and Jacques Verdu</i>	727
	<i>Index</i>	765