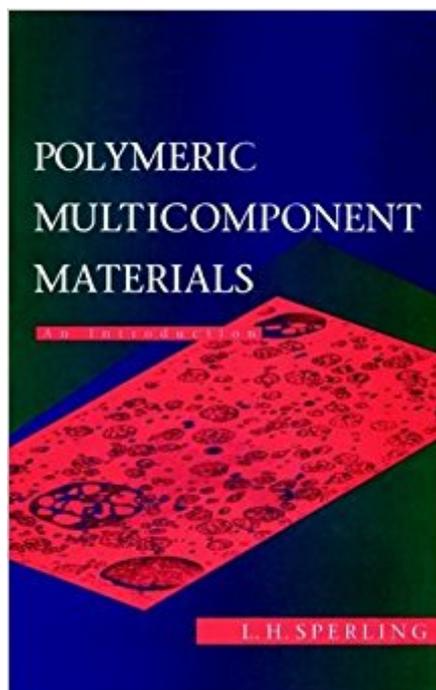


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Polymeric Multicomponent Materials: An Introduction



Synopsis

The only comprehensive review of multicomponent polymer theory and applications *Polymeric Multicomponent Materials* is the first comprehensive review of the field to appear since the author's 1976 classic, *Polymer Blends and Composites*. As such, it is an indispensable resource for professionals and graduate students alike in polymer science and engineering, chemistry, chemical engineering, materials science and engineering, physics, and mechanical engineering. The book begins with a review of essential terms, concepts, theories, and experimental facts and procedures concerning polymer-polymer and polymer-nonpolymer combinations. This material is followed by a series of chapters focusing on the relatively new subfield that has developed around polymer surfaces and interfaces. In the final section, the author covers a wide range of engineering polymer materials and systems. Emphasizing synthesis and mechanical behavior throughout, Professor Sperling treats all relevant chemical and physical aspects of both thermoplastics and thermosets. He provides in-depth coverage of most polymeric multicomponent materials currently being synthesized, including toughened plastics, reinforced elastomers, polymer blends, interpenetrating polymer networks, graft and block copolymers, and reinforcing and filling agents. He also explores a broad array of specific applications, including those for impact-resistant plastics, structural composites, coatings, carbon black reinforced elastomers, and fiber reinforced plastics. *Polymeric Multicomponent Materials* is certain to be the standard text/reference in the field well into the next century.

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Customer Reviews

Designed for a graduate materials course, this up-to-date, well-organized text carefully guides readers through the ever-advancing field of polymer blends and composites, with special reference to synthesis and mechanical behavior. Includes coverage of the thermodynamics of polymer blend miscibility, polymer surfaces and interfaces, the mechanisms of fracture and fracture resistance and how two-phased systems can impart toughness and more. Impact resistant plastics, coatings, aerospace and other applications are also discussed.

The only comprehensive review of multicomponent polymer theory and applications *Polymeric Multicomponent Materials* is the first comprehensive review of the field to appear since the author's 1976 classic, *Polymer Blends and Composites*. As such, it is an indispensable resource for professionals and graduate students alike in polymer science and engineering, chemistry, chemical engineering, materials science and engineering, physics, and mechanical engineering. The book begins with a review of essential terms, concepts, theories, and experimental facts and procedures concerning polymer-polymer and polymer-nonpolymer combinations. This material is followed by a series of chapters focusing on the relatively new subfield that has developed around polymer surfaces and interfaces. In the final section, the author covers a wide range of engineering polymer materials and systems. Emphasizing synthesis and mechanical behavior throughout, Professor Sperling treats all relevant chemical and physical aspects of both thermoplastics and thermosets. He provides in-depth coverage of most polymeric multicomponent materials currently being synthesized, including toughened plastics, reinforced elastomers, polymer blends, interpenetrating polymer networks, graft and block copolymers, and reinforcing and filling agents. He also explores a broad array of specific applications, including those for impact-resistant plastics, structural composites, coatings, carbon black reinforced elastomers, and fiber reinforced plastics. *Polymeric Multicomponent Materials* is certain to be the standard text/reference in the field well into the next century.

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