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Lattices 3.7 The Case of Isotactic Polypropylene - A Textbook Case; 3.8 Density of Vibrational States and Neutron Scattering; 3.9 Moving Towards Reality: From Order to Disorder; 3.10 What Do We Learn from Calculations; 3.11 A Very Simple Case: Lattice Dynamics of HCl-DCI Mixed Crystals; 3.12 CIS-tram Opening of the Double Bond in the Polymerisation of Ethylene; 3.13 Defect Modes as Structural Probes in Polymethylene Chains; 3.14 Case studies:; Case 1 Conformational Mapping of Fatty Acids Through Mass Defects
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Case 3 Chain Folding in Polyethylene Single Crystals; Case 4 The Structure of the Skin and Core in Polyethylene Films (Normal and Ultradrawn); Case 5 Moving Towards More Complex Polymethylene Systems; 3.15 Simultaneous Configurational and Conformational Disorder. The case of Polyvinylchloride; 3.16 Structural Inhomogeneity and Raman Spectroscopy of LAM Modes; 3.17 Fermi Resonances; 3.18 Band Broadening and Conformational Flexibility; 3.19 A Worked Out Example: From N-Alkanes to Polyethylene. Structure and Dynamics
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Sommario/riassunto

Modern Polymer Spectroscopy provides a 'guided tour' to the state of the art in polymer analysis by vibrational spectroscopy. Five renowned experts describe new experimental and theoretical techniques. Areas of focus include:- two-dimensional infrared spectroscopy- segmental mobility of liquid crystalline polymers under external fields- dynamics and structure of polymers with chemical and structural disorder- spectra of polyconjugated conducting polymers- theoretical calculations on biopolymers. Readers learn experimental techniques and theoretical tools essential for ob
