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Autore	Vos Johannes G
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Altri autori (Persone)	ForsterRobert J KeyesTia E
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Nota di contenuto	INTERFACIAL SUPRAMOLECULAR ASSEMBLIES; Acknowledgments; Contents; 1 Introduction; 1.1 Introductory Remarks; 1.2 Interfacial Supramolecular Chemistry; 1.3 Objectives of this Book; 1.4 Testing Contemporary Theory Using ISAs; 1.5 Analysis of Structure and Properties; 1.6 Formation and Characterization of Interfacial Supramolecular Assemblies; 1.7 Electron and Energy Transfer Properties; 1.8 Interfacial Electron Transfer Processes at Modified Semiconductor Surfaces; Further Reading; 2 Theoretical Framework for Electrochemical and Optical Processes; 2.1 Introduction; 2.2 Electron Transfer 2.2.1 Homogenous Electron Transfer2.2.2 Heterogeneous Electron Transfer; 2.3 Photoinduced Processes; 2.3.1 Photochemistry and Photophysics of Supramolecular Materials; 2.3.2 Photoinduced Electron Transfer; 2.3.3 Photoinduced Energy Transfer; 2.3.4 Photoinduced Molecular Rearrangements; 2.4 Photoinduced Interfacial Electron Transfer; 2.4.1 Dye-Sensitized Photoinduced Electron Transfer at Metal Surfaces; 2.4.2 Dye-Sensitized Photoinduced Electron Transfer at

Semiconductor Surfaces; 2.4.3 Photoinduced Interfacial Energy Transfer; 2.5 Elucidation of Excited-State Mechanisms; 2.6 Conclusions References and Notes3 Methods of Analysis; 3.1 Structural Characterization of Interfacial Supramolecular Assemblies; 3.1.1 Scanning Probe Microscopy; 3.1.2 Scanning Electrochemical Microscopy; 3.1.3 Contact Angle Measurements; 3.1.4 Mass-Sensitive Approaches; 3.1.5 Ellipsometry; 3.1.6 Surface Plasmon Resonance; 3.1.7 Neutron Reflectivity; 3.2 Voltammetric Properties of Interfacial Supramolecular Assemblies; 3.2.1 Electrochemical Properties of an Ideal Redox-Active Assembly; 3.2.2 The Formal Potential; 3.2.3 Effect of Lateral Interactions; 3.2.4 Diffusional Charge Transport through Thin Films
3.2.5 Rotating Disk Voltammetry3.2.6 Interfacial Capacitance and Resistance; 3.3 Spectroscopic Properties of Interfacial Supramolecular Assemblies; 3.3.1 Luminescence Spectroscopy; 3.3.2 Fluorescence Depolarization; 3.3.3 Epifluorescent and Confocal Microscopy; 3.3.4 Near-Field Scanning Optical Microscopy; 3.3.5 Raman Spectroscopy; 3.3.6 Second Harmonic Generation; 3.3.7 Single-Molecule Spectroscopy; 3.3.8 Spectroelectrochemistry; 3.3.9 Intensity-Modulated Photocurrent Spectroscopy; 3.4 Time-Resolved Spectroscopy of Interfacial Supramolecular Assemblies; 3.4.1 Flash Photolysis
3.4.2 Time-Resolved Luminescence Techniques3.4.3 Femtochemistry; 3.5 Conclusions; References; 4 Formation and Characterization of Modified Surfaces; 4.1 Introduction; 4.2 Substrate Choice and Preparation; 4.3 Formation of Self-Assembled Monolayers; 4.3.1 Solution-Phase Deposition; 4.3.2 Electrochemical Stripping and Deposition; 4.3.3 Thermodynamics of Adsorption; 4.3.4 Double-Layer Structure; 4.3.5 Post-Deposition Modification; 4.4 Structural Characterization of Monolayers; 4.4.1 Packing and Adsorbate Orientation; 4.4.2 Surface Properties; 4.5 Electrochemical Characterization
4.5.1 General Voltammetric Properties of Redox-Active Monolayers

Sommario/riassunto

Describes the supramolecular properties of molecular assemblies that contain a solid phase, offering an integrated approach to measurement and addressibility. * Offers an integrated approach to measurement and addressibility.* Features case studies describing the major devices developed using this technology.* The prospects for the future of interfacial supramolecular assemblies are considered.