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Collana	Physical Chemistry in Action, , 2197-4357
Altri autori (Persone)	ImuraYoshiro
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Soggetti	Colloids Surfaces (Technology) Thin films Self-assembly (Chemistry) Photocatalysis Materials Materials - Analysis Surfaces, Interfaces and Thin Film Molecular Self-assembly Characterization and Analytical Technique
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Nota di contenuto	Dynamics of Photo-Responsive Systems Consisting of Molecular Self-Assemblies -- Dynamics of Molecules Loaded on Polysaccharide Composite Films -- Spatio-temporal dynamic interfaces in biomaterials -- Ultrafast Vibrational Dynamics of Water at Interfaces -- What is the Role of Hydration Water in the Self-Assembly of Soft Materials Such as Lipids, Surfactants, Polymers, and Proteins? -- Dynamic Self-Assembly of Nanospheres towards Functional Surfaces -- Formation of Noble Metal Nanowires and Their Catalytic and Optical Properties -- Photoexcited Carrier Dynamics and Photocatalytic Activity on Titanium Dioxide Surfaces -- Carrier Transfer from Photocatalyst to Cocatalyst -- Dynamics of Polymer Chains via Interfacial Viscoelasticity Analysis -- Design and applications of polymer particles with dynamic structures

-- Roles of Cholesterol in Controlling Characteristics of Catanionic Vesicles -- Stability and Structural Analysis of Foams Formed by Surfactants Using Small-Angle Neutron Scattering -- Surfactant-Induced Elution of Plasticizers from Medical Devices -- Solubility Dynamics and Hydrophobic Interactions of Acidic Analgesics and Basic Anesthetics -- Antioxidative Mechanism of Radical Scavenger and Local Anesthetics -- In-Situ Observations of Friction Interfaces -- Friction Dynamics on Human-Skin Surfaces.

Sommario/riassunto

This book presents the dynamics of colloids and interfaces in various materials such as assemblies of surfactants, lipids, nanoparticles, and surfaces of biomaterials, catalysts and engineering materials. It covers a wide range of topics, from basics to applications, on fabrication, functions, and understanding the mechanisms of those systems. The book highlights the importance of understanding from the perspective of colloidal and interfacial chemistry for the materials exhibiting dynamic behaviors. Readers can find a new direction for the development of nano-stimulus-responsive systems consisting of molecular assemblies by understanding the relationships between the dynamics of molecules, the dynamics of molecular assemblies, and the dynamics of the functions of molecular assemblies. Also, the book provides useful knowledge for the development of new photocatalysts through a detailed explanation of the complex dynamics of electron transfer on the catalyst surface. The authors hope that common denominators will be found in different materials from the perspective of the dynamics of colloids and interfaces, and that readers will find guidelines for the development of new nanomaterials.
