

Switchable And Responsive Surfaces And Materials For Biomedical Applications Woodhead Publishing Series In Biomaterials

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Magnetically Responsive Elastomer-Silicon Hybrid Surfaces ...

Recently, responsive surface adhesion, especially switchable adhesion, under external stimulus in air has been paid more and more attention in fundamental research and industrial applications.

Electrodeposited surfaces with reversibly switching ...

The switchable wettability is essential for widespread applications in droplet manipulation, rewritable liquid patterning, fluid carrying, and so forth. However, it remains difficult to achieve the multistimuli-responsive, large-range, and reversible wetting switching especially for liquids with low surface tensions through surface topographical management. Here, we apply a simple and ...

Switchable and Responsive Surfaces and Materials for ...

3.1.3. Responsive peptides on surfaces. The desire to improve the interaction between man-made biomaterials and living biological systems, in terms of both understanding and controlling these interactions, has caused biomaterials to evolve from a passive to a responsive component that actively engages with its biological surrounding (Bryers, Giachelli, & Ratner, 2012).

Electric-Responsive Superwetting Surface | SpringerLink

Protein adsorption on thermo-responsive surfaces7.4. Protein adsorption on pH and/or ionic strength-responsive surfaces7.5. Synergistic effect of surface chemistry and nanostructures on protein adsorption7.6. Aspects for future research8. Interaction of responsive/switchable surfaces with ...

Switchable and Responsive Surfaces and Materials for ...

Engineered surfaces with reversibly switching interfacial properties, such as wettability and liquid repellency, are highly desirable in diverse application fields but are rare. We have developed a general concept to prepare metallic porous surfaces with exceptionally powerful wettability switch capabilities and liquid-repellent properties through an extremely simple one-step electrochemical ...

Switchable and Responsive Surfaces and Materials for ...

The responsive polymer brush can be considered one of the most promising systems to create such smart surfaces. Responsive polymer brushes have been shown to be able to control wettability, cell ...

A pH Switchable Responsive Surface for the Trapping And ...

Stimuli-responsive surfaces with tunable fluidic and optical properties utilizing switchable surface topography are of significant interest for both scientific and engineering research. This work presents a surface involving silicon scales on a magnetically responsive elastomer micropillar array, which enables fluid and light manipulation.

Multistimuli-Responsive Microstructured Superamphiphobic ...

This chapter summarizes the recent research progress of the electrical field responsive superwetting surface, particularly on switchable wettability on electric-responsive surface and the typical applications such as liquid actuation, adhesion control, optical devices, liquid separation, particles manipulation and patterning.

Peptide-based switchable and responsive surfaces ...

has led to a higher level of understanding of the switchable surfaces, and to a more precise interpretation and rationalization of the observed data. The perspectives on the challenges and opportunities for future progress on stimuli-responsive surfaces are also presented. 1. INTRODUCTION Surfaces with stimuli-responsive properties have emerged ...

Switchable and Responsive Surfaces and Materials for ...

"Switchable and Responsive Surfaces and Materials for Biomedical Applications" is a book that presents in depth reviews of state of the art responsive mechanisms of materials and surfaces that find applications in the biomedical field.

Switchable and Responsive Surfaces and Materials for ...

Switchable and Responsive Surfaces and Materials for Biomedical Applications outlines synthetic and biological materials that are responsive under different stimuli, their surface design and...

Switchable And Responsive Surfaces And

Switchable and Responsive Surfaces and Materials for Biomedical Applications outlines synthetic and biological materials that are responsive under different stimuli, their surface design and modification techniques, and applicability in regenerative medicine/tissue engineering, drug delivery, medical devices, and biomedical diagnostics.

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Switchable and Responsive Surfaces and Materials for ...

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Electrically Responsive Surfaces: Experimental and ...

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Switchable and responsive surfaces and materials for ...

We present a method to control the interfacial energy of a liquid metal via electrochemical deposition (or removal) of an oxide layer on its surface. Unlike conventional surfactants, this approach can tune the interfacial tension of a metal significantly (from $\sim 7\times$ that of water to near zero), rapidly, and reversibly using only modest voltages.

Giant and switchable surface activity of liquid metal via ...

A pH Switchable Responsive Surface for the Trapping And Release of a Hydrophobic Substance