

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

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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.

Switchable and Responsive Surfaces and Materials for ...

Switchable and Responsive Surfaces and Materials for Biomedical Applications | Surface modification of biomaterials can ultimately determine whether a material is accepted or rejected from the human body, and a responsive surface can further make the material smart and intelligent.

Switchable and Responsive Surfaces and Materials for ...

Some responses in the form of physical or phase changes can be "switchable" or "reversible.". With the development of materials science, especially with the development of synthetic polymers and surface chemistry, these materials and surfaces have been designed for broad applications.

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. February 2015; DOI: 10.1016/B978-0-85709-713-2.00005-5. In book: Switchable and Responsive Surfaces and Materials for ...

Switchable and Responsive Surfaces and Materials for ...

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Switchable and Responsive Surfaces and Materials for ...

Protein adsorption on thermo-responsive surfaces7.4. Protein adsorption on pH and/or ionic strength-responsive surfaces7.5. Protein adsorption on other responsive surfaces7.6. Synergistic effect of surface chemistry and nanostructures on protein adsorption7.7. Aspects for future research8. Interaction of responsive/switchable surfaces with ...

Switchable and responsive surfaces and materials for ...

Dual-stimuli-responsive surfaces are reported here that work under the external stimuli of temperature and/or pH, as demonstrated in the Figure: When the pH and/or temperature is varied, the contact angles (CAs) of the dual-responsive materials change reversibly. The general change in trend of wettability is that half of the water CAs are almost all larger than 130° (red background) and ...

Dual-Responsive Surfaces That Switch between ...

We believe that such surfaces with thermal-responsive superhydrophobicity, anisotropic wettability, and switchable adhesion will have enormous potential applications in non-loss droplet transfer, biological detection, and lab-on-chip devices.

Anisotropic, adhesion-switchable, and thermal-responsive ...

Considering the complexity of biological environments, surfaces with multistimulus responsive switchable bioactivity are of great interest. In the work reported herein, a multistimulus responsive biointerface with on-off switchable bioadhesion (protein adsorption, bacterial adhesion, and cell adhesion) and surface functions in response to change in temperature, pH, or sugar content is developed.

Multistimulus Responsive Biointerfaces with Switchable ...

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 ...

Electrically Responsive Surfaces: Experimental and ...

A stimuli-responsive gel impregnated surface with switchable lipophilic/oleophobic properties Zhenghong Li , a Yingzhi Liu , a Ming Lei , a Ansu Sun , b Sreepathy Sridhar , b Yifan Li , b Xuqing Liu , c Haibao Lu , * a Yong Qing Fu b and Ben Bin Xu * b

A stimuli-responsive gel impregnated surface with ...

Surface modification of biomaterials can ultimately determine whether a material is accepted or rejected from the human body, and a responsive surface can further make the material "smart" and "intelligent". Switchable and Responsive Surfaces and Materials for Biomedical Applications outlines synthetic and biological materials that are responsive under different stimuli, their surface design ...