

1.	Record Nr.	UNINA990009962960403321
	Autore	Sternini, Mara
	Titolo	La verrerie romaine du Musee archeologique de Nimes / Mara Sternini
	Pubbl/distr/stampa	[Nimes : Musees d'art et d'histoire, stampa 1990-1991]
	ISBN	2902309686
	Descrizione fisica	2 v. (216 p., [22] p. di tav.) : ill. ; 30 cm
	Collana	Cahiers des musees et monuments de Nimes ; 8
	Disciplina	748.299370744483
	Locazione	FLFBC
	Collocazione	748 CATALOGHI NIMES 1991 (2)
	Lingua di pubblicazione	Francese
	Formato	Materiale a stampa
	Livello bibliografico	Monografia
2.	Record Nr.	UNINA9910830898303321
	Autore	Guo Xuefeng
	Titolo	Interface Engineering in Organic Field-Effect Transistors / / Xuefeng Guo and Hongliang Chen
	Pubbl/distr/stampa	Weinheim, Germany : , : WILEY-VCH GmbH, , [2023] ©2023
	ISBN	3-527-84048-6 3-527-84047-8 3-527-84046-X
	Edizione	[First edition.]
	Descrizione fisica	1 online resource (273 pages)
	Disciplina	530.417
	Soggetti	Interfaces (Physical sciences) Organic field-effect transistors
	Lingua di pubblicazione	Inglese
	Formato	Materiale a stampa
	Livello bibliografico	Monografia

Cover -- Title Page -- Copyright -- Contents -- Preface -- Author Biographies -- List of Acronyms and Abbreviations -- Chapter 1 Introduction -- 1.1 Different Interfaces in OFETs -- 1.2 Brief Historic Overview of Interface Engineering in OFETs -- 1.3 Scope of the Book -- Chapter 2 Interfacial Modification Methods -- 2.1 Noncovalent Modification Methods -- 2.1.1 Charge Insertion Layer at the Electrode Surface -- 2.1.2 Dielectric Surface Passivation Methods -- 2.2 Covalent Modification Methods -- 2.2.1 SAM Modification of Electrodes -- 2.2.2 SAM Modification of Dielectrics -- 2.2.2.1 SAM/SiO₂ Dielectrics -- 2.2.2.2 SAM/Highk Dielectrics -- 2.2.2.3 SelfAssembled Monolayer FieldEffect Transistors (SAMFETs) -- 2.3 Efforts in Developing New Methods -- Chapter 3 Semiconductor/Semiconductor Interface -- 3.1 Influence of Additives on a Material's Nucleation and Morphology -- 3.1.1 Solvent Additives -- 3.1.2 Nucleating Agents -- 3.1.3 Template Mediated Crystallization -- 3.1.4 Blending with Insulating Polymers -- 3.1.5 Blending with Polymer Elastomer: Nanoconfinement Effect -- 3.2 Enhancing the Performance Through Semiconductor Heterojunctions -- 3.2.1 Planar Bilayer Heterostructures -- 3.2.2 MolecularLevel Heterojunction -- 3.2.3 Supramolecular Arrangement of the Heterojunctions -- 3.3 Integrating Molecular Functionalities into Electrical Circuits -- 3.3.1 ChargeTrappingInduced Memory Effect -- 3.3.2 PhotochromismInduced Switching Effect -- Chapter 4 Semiconductor/Electrode Interface -- 4.1 Work Function Tuning for Better Contact -- 4.1.1 SAM Modification -- 4.1.2 Charge Insertion Layer Modification -- 4.1.3 PolymerBased Electrodes -- 4.1.4 Carbon NanomaterialBased Electrodes -- 4.1.5 Covalent Bond Formation at the Molecular Level -- 4.2 Installing Switching Effects at Semiconductor/Electrode Interface. Chapter 5 Semiconductor/Dielectric Interface -- 5.1 Dielectric Modification to Tune Semiconductor Morphology -- 5.1.1 Dielectric Surface Energy Control -- 5.1.1.1 Modify with SAM -- 5.1.1.2 Surface Modification with Polymers -- 5.1.2 Dielectric Microstructure Design -- 5.1.2.1 Roughness Effect -- 5.1.2.2 Nanofabrication Created Microstructure -- 5.1.2.3 Selfassembled Morphology of Dielectric -- 5.2 Eliminating Interfacial Traps -- 5.2.1 Dielectric Surface Passivation (Treatment) Methods -- 5.2.1.1 Polymer Encapsulation of Dielectrics -- 5.2.1.2 Gap Dielectrics -- 5.2.2 SAM/SiO₂ Dielectrics -- 5.2.2.1 Provide Efficient Insulating Barrier Height -- 5.2.2.2 Control Surface Polarity and Carrier Density -- 5.2.3 SAM/Highk Dielectrics -- 5.2.3.1 Fundamentals of SAMModified Highk Dielectrics -- 5.2.3.2 SAM/High k Hybrid Dielectrics for Flexible Substrate -- 5.2.4 Selfassembled Monolayer FieldEffect Transistors (SAMFETs) -- 5.2.4.1 Molecule Design for SAMFETs -- 5.2.4.2 Morphology Control of SAMFET -- 5.3 Integrating New Functionalities -- 5.3.1 Photoresponsive Dielectrics -- 5.3.2 Other External StimuliResponsive Dielectrics -- 5.3.2.1 Pressure Sensor -- 5.3.2.2 Thermal Sensor -- 5.3.2.3 Magnetic Sensor -- 5.3.2.4 Multifunctional Sensor -- 5.3.3 Integrating Memory Effect at the Dielectrics -- Chapter 6 Semiconductor/Environment Interface -- 6.1 Device Optimization to Improve Sensing Performance -- 6.1.1 Monolayer Functionalization -- 6.1.2 Bilayer Heterojunction Approach -- 6.1.3 Remote Floating Gate -- 6.2 OECTBased and EGOFETBased Sensors -- Chapter 7 Interfacing Organic Electronics with Biology -- 7.1 Integration of OFETs/OECTs with Nonelectrogenic Cells -- 7.2 Integration of Flexible Bioelectronics with Electrogenic Cells -- 7.3 Light/Cell/Device Interfaces -- Chapter 8 Concluding Remarks and Outlook -- 8.1 New Challenges in Molecular Design. 8.2 HighQuality OSC Films: SelfAssembly Control -- 8.3 High

Performance Scalable Flexible Optoelectronics -- 8.4 Exploration of Novel Structures: Organic/2D Heterostructures and Vertical Structures -- 8.5 Instability: Stability in Aqueous Media and Thermal Stability in Hygienic Applications -- 8.6 Multifunctional Sensor Systems -- References -- Index -- EULA.

Sommario/riassunto

Interface Engineering in Organic Field-Effect Transistors: A systematic summary of advances in developing effective methodologies of interface engineering in organic field-effect transistors, from models to experimental techniques. Interface Engineering in Organic Field-Effect Transistors covers the state of the art in organic field-effect transistors and reviews charge transport at the interfaces, device design concepts, and device fabrication processes, and gives an outlook on the development of future optoelectronic devices. This book starts with an overview of the commonly adopted methods to obtain various semiconductor/semiconductor interfaces and charge transport mechanisms at these heterogeneous interfaces. Then, it covers the modification at the semiconductor/electrode interfaces, through which to tune the work function of electrodes as well as reveal charge injection mechanisms at the interfaces. Charge transport physics at the semiconductor/dielectric interface is discussed in detail. The book describes the remarkable effect of SAM modification on the semiconductor film morphology and thus the electrical performance. In particular, valuable analyses of charge trapping/detrapping engineering at the interface to realize new functions are summarized. Finally, the sensing mechanisms that occur at the semiconductor/environment interfaces of OFETs and the unique detection methods capable of interfacing organic electronics with biology are discussed. Specific sample topics covered in Interface Engineering in Organic Field-Effect Transistors include: Noncovalent modification methods, charge insertion layer at the electrode surface, dielectric surface passivation methods, and covalent modification methods. Charge transport mechanism in bulk semiconductors, influence of additives on materials' nucleation and morphology, solvent additives, and nucleation agents. Nanoconfinement effect, enhancing the performance through semiconductor heterojunctions, planar bilayer heterostructure, ambipolar charge-transfer complex, and supramolecular arrangement of heterojunctions. Dielectric effect in OFETs, dielectric modification to tune semiconductor morphology, surface energy control, microstructure design, solution shearing, eliminating interfacial traps, and SAM/SiO₂ dielectrics. A timely resource providing the latest developments in the field and emphasizing new insights for building reliable organic electronic devices, Interface Engineering in Organic Field-Effect Transistors is essential for researchers, scientists, and other interface-related professionals in the fields of organic electronics, nanoelectronics, surface science, solar cells, and sensors.
