1. Record Nr. UNINA9910280874903321

Titolo	On-Surface Synthesis II : Proceedings of the International Workshop On-Surface Synthesis, San Sebastián, 27-30 June 2016 / / edited by Dimas G. de Oteyza, Celia Rogero
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2018
ISBN	9783319758107 3319758101
Edizione	[1st ed. 2018.]
Descrizione fisica	1 online resource (231 pages)
Collana	Advances in Atom and Single Molecule Machines, , 2193-9705
Disciplina	541.3453
Soggetti	Nanochemistry Nanoscience Surfaces (Technology) Thin films Polymers Chemistry, Physical and theoretical Chemistry, Organic Nanophysics Surfaces, Interfaces and Thin Film Theoretical Chemistry Organic Chemistry
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Preface -- Mechanistic insights into surface-supported chemical reactions -- Kinetic and thermodynamic considerations in on-surface synthesis -- Heat or light? Tools of choice for on-surface synthesis -- Reactivity on and of graphitic substrates at the liquid-solid interface: scanning probe microscopy reveals -- C-H activation as a generic route for on-surface synthesis of complex macromolecules -- Dehydrogenative and dehalogenative homocoupling reactions of C-X groups on metal surfaces -- On-surface Ullmann reaction for the synthesis of macrocycles and polymers -- Bottom-up fabrication of

atomically precise graphene nanoribbons -- Aryl-aryl covalent coupling on rutile TiO2 surfaces -- On-surface synthesis of 2D networks: from graphene-like to graphyne-like networks -- Cu- and Pd-catalyzed on-surface coupling reactions -- nc-AFM to Address Long-Standing Chemical Challenges.

Sommario/riassunto

On-surface synthesis is appearing as an extremely promising strategy to create organic nanoarchitectures with atomic precision. Molecular building blocks holding adequate functional groups are dosed onto surfaces that support or even drive their covalent linkage. The surface confinement and the frequent lack of solvents (most commonly being performed under vacuum conditions) create a completely new scenario fully complementary to conventional chemistry. In a pedagogical way and based on the most recent developments, this volume presents our current understanding in the field, addressing fundamental reaction mechanisms, synthetic strategies to influence the reactions according to our needs, as well as the ultimate growth and characterization of functional materials. Verging on chemistry, physics and materials science, the book is aimed at students and researchers interested in nanochemistry, surface science, supramolecular materials and molecular devices. Chapters "Mechanistic insights into surface-supported chemical reactions", "Reactivity on and of Graphene Layers: Scanning Probe Microscopy Reviels" and "Bottom-up fabrication of atomically precise graphene nanoribbons" of this book are available open access under a CC BY 4.0 license at link.springer.com.