

1. Record Nr.	UNINA9910420950803321
Titolo	DNA Nanotechnology : From Structure to Functionality // edited by Chunhai Fan, Yonggang Ke
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2020
ISBN	3-030-54806-6
Edizione	[1st ed. 2020.]
Descrizione fisica	1 online resource (IX, 406 p.)
Collana	Topics in Current Chemistry Collections, , 2367-4075
Disciplina	572.86
Soggetti	Nanotechnology Biotechnology Biomaterials Nucleic acids Nanoscience Nucleic Acid Nanophysics
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Towards Active Self-assembly through DNA Nanotechnology -- Tailoring DNA self-assembly to build hydrogels -- DNA-Programmed Chemical Synthesis of Polymers and Inorganic Nanomaterials -- Engineering Functional DNA-Protein Conjugates for Biosensing, Biomedical, and Nanoassembly Applications -- DNA-Scaffolded Proximity Assembly and Confinement of Multienzyme Reactions -- Directional assembly of nanoparticles by DNA shapes: towards designed architectures and functionality -- Oligonucleotide-Polymer Conjugates: From Molecular Basic to Practical Application -- Biotechnological and Therapeutic Applications of Natural Nucleic Acid Structural Motifs -- DNA driven Nanoparticle Assemblies for Biosensing and Bioimaging -- Aptamer-functionalized DNA Nanostructures for Biological Applications -- High-performance biosensing based on autonomous enzyme-free DNA circuits -- DNA strand displacement reaction: a powerful tool for discriminating single nucleotide variants.
Sommario/riassunto	The series Topics in Current Chemistry Collections presents critical

reviews from the journal Topics in Current Chemistry organized in topical volumes. The scope of coverage is all areas of chemical science including the interfaces with related disciplines such as biology, medicine and materials science. The goal of each thematic volume is to give the non-specialist reader, whether in academia or industry, a comprehensive insight into an area where new research is emerging which is of interest to a larger scientific audience. Each review within the volume critically surveys one aspect of that topic and places it within the context of the volume as a whole. The most significant developments of the last 5 to 10 years are presented using selected examples to illustrate the principles discussed. The coverage is not intended to be an exhaustive summary of the field or include large quantities of data, but should rather be conceptual, concentrating on the methodological thinking that will allow the non-specialist reader to understand the information presented. Contributions also offer an outlook on potential future developments in the field. The chapter "DNA-Programmed Chemical Synthesis of Polymers and Inorganic Nanomaterials" is available open access under a CC BY 4.0 License via link.springer.com.
