

1. Record Nr.	UNINA9910830515103321
Titolo	Artificial metalloenzymes and metalloDNAzymes in catalysis : from design to applications // edited by Montserrat Dieguez, Jan-E. Backvall, Oscar Pamies
Pubbl/distr/stampa	Weinheim, Germany : , : Wiley-VCH, , 2018 ©2018
ISBN	3-527-80409-9 3-527-80407-2 3-527-80408-0
Descrizione fisica	1 online resource (430 pages) : illustrations, tables
Disciplina	572.51
Soggetti	Metalloenzymes Enzymes Catalysis
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references at the end of each chapters and index.
Nota di contenuto	Preparation of artificial metalloenzymes -- Preparation of metalloDNAzymes -- Experimental characterization techniques of hybrid catalysts -- Computational studies of artificial metalloenzymes: from methods and models to design and optimization -- Directed evolution of artificial metalloenzymes: bridging synthetic chemistry and biology -- Artificial metalloenzymes for hydrogenation and transfer hydrogenation reactions -- Hybrid catalysts for oxidation reactions -- Hybrid catalysts as Lewis acid -- Hybrid catalysts for C-H activation and other X-H insertion reactions -- Hybrid catalysts for other C-C and C-X bond formation reactions -- Metal-enzyme hybrid catalysts in cascade and multicomponent processes -- Metalloenzyme-inspired systems for alternative energy harvest -- Synthesis and application of hybrid catalysts with metalloenzyme-like properties.
Sommario/riassunto	An important reference for researchers in the field of metal-enzyme hybrid catalysis Artificial Metalloenzymes and MetalloDNAzymes in Catalysis offers a comprehensive review of the most current strategies,

developed over recent decades, for the design, synthesis, and optimization of these hybrid catalysts as well as material about their application. The contributors' noted experts in the field present information on the preparation, characterization, and optimization of artificial metalloenzymes in a timely and authoritative manner. The authors present a thorough examination of this interesting new platform for catalysis that combines the excellent selective recognition/binding properties of enzymes with transition metal catalysts. The text includes information on the various applications of metal-enzyme hybrid catalysts for novel reactions, offers insights into the latest advances in the field, and contains an informative perspective on the future: ' -Explores the development of artificial metalloenzymes, the modern and strongly evolving research field on the verge of industrial application -Contains a comprehensive reference to the research area of metal-enzyme hybrid catalysis that has experienced tremendous growth in recent years -Includes contributions from leading researchers in the field -Shows how this new catalysis combines the selective recognition/binding properties of enzymes with transition metal catalysts Written for catalytic chemists, bioinorganic chemists, biochemists, and organic chemists, *Artificial Metalloenzymes and MetalloDNAzymes in Catalysis* offers a unique reference to the fundamentals, concepts, applications, and the most recent developments for more efficient and sustainable synthesis.
