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Nota di contenuto	Progress in Inorganic Chemistry; Contents; Chapter 1: Iron Catalysis in Synthetic Chemistry; I. INTRODUCTION; II. ADDITION REACTIONS; A. Cycloadditions; 1. The [2+2] Cycloaddition; 2. The [3+2] Cycloaddition; 3. The [2+2+2] Cycloaddition; 4. The [4+2] Cycloaddition; B. Cyclopropanation; C. Aziridination and Aziridine Ring-Opening Reactions; D. Carbometalation of C-C Unsaturated Bond; E. Michael Addition; F. Barbier-Type Reaction; G. Kharasch Reaction; III. THE C-C BOND FORMATIONS VIA C-H FUNCTIONALIZATION; A. The C-H Arylation; 1. Direct Arylation With Organometallic Reagents 2. Direct Arylation With Aryl Halides B. The C-C Bond Formation Via Cross-Dehydrogenative Coupling; 1. The CDC Between Two sp ³ C-H Bonds; 2. The CDC Between sp ³ and sp ² C-H Bonds; 3. The CDC Between sp ³ and sp C-H Bonds; C. The C-C Bond Formation via Cross-Decarboxylative Coupling; D. The C-C Bond Formation via Alkene Insertion; E. Oxidative Coupling of Two C-H Bonds; IV. THE C-H BOND OXIDATION; A. Hydroxylation; B. Epoxidation; C. cis-Dihydroxylation; V. CROSS-COUPLING REACTIONS; A. Alkenyl Derivatives as Coupling Partners; B. Aryl Derivatives as Coupling Partners

C. Alkyl Derivatives as Coupling Partners1. Low-Valent Iron Complex in Cross-Coupling Reactions; D. Acyl Derivatives as Coupling Partners; E. Iron-Catalyzed C-O, C-S, and C-N Cross-Coupling Reaction; F. Iron-Catalyzed Mizoraki-Heck Reaction; G. Iron-Catalyzed Negishi Coupling Reaction; H. Suzuki-Miyaura Coupling Reaction; I. Sonogashira Reaction; J. Mechanism of Cross-Coupling Reactions; K. Hydrocarboxylation; L. Ene Cross-Coupling Reaction; VI. DIRECT C-N BOND FORMATION VIA C-H OXIDATION; VII. IRON-CATALYZED AMINATION; A. Allylic Aminations; B. Intramolecular Allylic Amination VIII. SULFOXIDATIONS AND SYNTHESIS OF SULFOXIMINES, SULFIMIDES, AND SULFOXIMIDES A. Sulfoxidation; B. Synthesis of Sulfoximines, Sulfimides, and Sulfoximides; 1. Mechanism; IX. REDUCTION REACTIONS; A. Hydrosilylation of Alkenes; B. Hydrosilylation of Aldehydes and Ketones; C. Hydrogenation of C-C Unsaturated Bonds; D. Hydrogenation of Ketones; E. Hydrogenation of Imines; F. Reduction of Nitroarene to Anilines; G. Hydrogenation of Carbon Dioxide and Bicarbonate; H. Amide Reduction; I. Reductive Aminations; X. TRIFLUOROMETHYLATION; XI. CONCLUSION; ACKNOWLEDGMENTS; ABBREVIATIONS; REFERENCES

Chapter 2: A New Paradigm for Photodynamic Therapy Drug Design: Multifunctional, Supramolecular DNA Photomodification Agents Featuring Ru(II)/Os(II) Light Absorbers Coupled to Pt(II) or Rh(III) Bioactive Sites I. INTRODUCTION; A. Scope and Limitations; B. Cancer; C. Deoxyribonucleic Acid as a Target; II. PHOTODYNAMIC THERAPY; A. Requirements; B. Traditional PDT Agents; C. Ruthenium(II) Light Absorbers as PDT Agents; III. PLATINUM AND RHODIUM CENTERS AS BIOACTIVE SITES; A. Platinum(II) Based Chemotherapeutics; 1. Cisplatin; 2. Second and Third Generation Pt(II) Drugs B. Rhodium as a Bioactive Site

Sommario/riassunto

This series provides inorganic chemists and materials scientists with a forum for critical, authoritative evaluations of advances in every area of the discipline. Volume 59 continues to report recent advances with a significant, up-to-date selection of contributions by internationally-recognized researchers. The chapters of this volume are devoted to the following topics: Iron Catalysis in Synthetic Chemistry A New Paradigm for Photodynamic Therapy Drug Design: Multifunctional, Supramolecular DNA Photomodification Agents Featuring Ru(II)/Os(II) Light Absorbers Coupled t