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| Nota di contenuto | Part I. C(sp2)-C(sp3) Bond Formation Reactions Enabled by Photoredox/Nickel Dual Catalysis -- Chapter 1. The Key Concepts and Strategy in Photoredox/Nickel Dual Catalysis and Application to C-C Bond Formation Reactions -- Chapter 2. High Regioselective and E/Z Selective Hydroalkylation of Alkyne via Photoredox Mediated Ni/Ir Dual Catalysis -- Part II. Development of C(sp3)-Heteroatom Bond-Forming Reactions via Electrochemical Activation of C(sp3)-B Bonds and Follow-up Projects -- Chapter 3. Recent Achievements of C(sp3)-Heteroatom Bond Formation in Electroorganic Synthesis and History of C(sp3)-B Bond Activation -- Chapter 4. Introduction of Heteroatoms to Alkyl Carbocations Generated from Alkylboron Reagents via Electrochemical Activation -- Chapter 5. Functionalization of Alkylboron Compounds Under Other Reaction Conditions. |
| Sommario/riassunto | This book addresses novel C(sp3)-C(sp2) and C(sp3)-heteroatom bond-forming reactions. Two strategies are given in the book using photoredox or electrochemical methods. The first strategy describes |

that the hydroalkylation of alkynes via photoredox-mediated Ni/Ir dual catalysis produces trisubstituted alkenes as versatile synthetic building blocks for the synthesis of pharmaceutical agents and natural products. High regioselectivity and E/Z-selectivity were achieved by introducing silyl groups that can provide steric and electronic effects to these selectivities with extensive opportunities for post-functionalization. The second strategy enables the development of C(sp₃)-heteroatom bond-forming reactions through the electrochemical activation of C(sp₃)-B bonds. The bonding of heteroatoms to carbon atoms has been an enduring subject of investigation for organic chemists. The function of most molecules is mainly determined by heteroatoms attached to the carbon atom, although the backbone structure of organic compounds comprises carbon fragments.
