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Nota di contenuto	Cover; Contents; Abbreviations; Introduction; Chapter 1 The Nature of N-Heterocyclic Carbenes; 1.1 Synthesis; 1.1.1 Synthesis of the Imidazolium Salts; 1.1.2 Closing the Ring; 1.1.3 Synthesis of the Free Carbenes; 1.1.4 Synthesis of Transition Metal Complexes of NHC; 1.2 Properties of NHC; 1.2.1 The Internal Electronic Structure; 1.2.2 Basicity of NHC; 1.2.3 Steric Properties; 1.2.4 The Carbene-Metal Bond; 1.2.5 Decomposition Pathways; References; Chapter 2 Why Functionalisation?; 2.1 Phosphane Mimic; 2.2 Hemilability; 2.3 Chirality; 2.3.1 Planar Chirality; 2.3.2 Axial Chirality 2.4 Ligand Geometry 2.5 Catalysis; 2.5.1 Allylic Alkylation; 2.5.2 Coupling Reactions; 2.5.3 Olefin Metathesis; 2.5.4 Polymerisations; 2.5.5 Organocatalysis; References; Chapter 3 N-Heterocyclic Carbenes with Neutral Tethers; 3.1 Amine Functionalities; 3.1.1 Heteroaromatic Functional Groups; 3.1.2 Oxazolines; 3.1.3 Imino Functional Groups; 3.1.4 Amino Functionalised NHC; 3.2 Oxygen-Containing Groups; 3.3

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Sommario/riassunto

N-heterocyclic carbenes (NHCs) have found increasing use as reagents for a range of organic transformations and in asymmetric organocatalysis. The performance of these molecules can be improved and tuned by functionalisation. Functionalised carbenes can anchor free carbenes to the metal site, introduce hemilability, provide a means to immobilise transition metal carbene catalysts, introduce chirality, provide a chelate ligand or bridge two metal centres. NHC can be attached to carbohydrates and campher, derived from amino acids and purines, they can be used as organocatalysts mimicking vitamin
