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Nota di contenuto	Ideas in Chemistry and Molecular Sciences; Contents; Preface; List of Contributors; Part I Innovative Processes in Organic Chemistry; 1 N-Hydroxy Derivatives: Key Organocatalysts for the Selective Free Radical Aerobic Oxidation of Organic Compounds; 1.1 Introduction; 1.2 General Reactivity of N-Hydroxy Derivatives; 1.3 Aerobic Oxidation Catalyzed by N-Hydroxy Amines; 1.3.1 Aerobic Oxidation of Alcohols to Aldehydes and Ketones; 1.4 Aerobic Oxidation Catalyzed by N-Hydroxy Amides; 1.4.1 Peroxidation of Polyunsaturated Fatty Acids; 1.5 Aerobic Oxidation Catalyzed by N-Hydroxy Imides 1.5.1 Oxidation of Benzylalcohols to Aldehydes1.5.2 Oxidation of Silanes; 1.5.3 Oxidation of N-Alkylamides; 1.5.4 Oxidation of Tertiary Benzylamines to Aldehydes; 1.5.5 Oxidative Functionalization of Alkylaromatics; 1.5.6 Oxidative Acylation of N-Heteroaromatic Bases; 1.5.7 Aerobic Synthesis of p-Hydroxybenzoic Acids and Diphenols; 1.5.8 Selective Halogenation of Alkanes; 1.5.9 Aerobic Oxidation of

Cycloalkanes to Diacids; 1.5.10 Epoxidation of Olefins; 1.5.11 Oxidation of Alkylaromatics; 1.6 Conclusions; Acknowledgments; References
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2.3.2 Gold-Catalyzed Intermolecular Hetero-Dehydro-Diels-Alder Cycloaddition of Push-Pull Dienynes with Nonactivated Nitriles: Regioselective Synthesis of Pyridines2.4 Conclusions and Future Perspectives; Acknowledgments; References; 3 N-Heterocyclic Carbenes in Copper-Catalyzed Reactions; 3.1 Introduction; 3.2 Preparation of NHC-Containing Copper Complexes; 3.3 Main Applications of [(NHC)Cu] Complexes in Catalysis; 3.4 Copper Hydride-Mediated Reactions; 3.4.1 Hydrosilylation of Carbonyl Compounds; 3.4.2 Mechanistic Considerations; 3.4.3 Related Transformations
3.5 [3 + 2] Cycloaddition of Azides and Alkynes3.5.1 Click Chemistry; 3.5.2 Use of Internal Alkynes: Mechanistic Implications; 3.6 Concluding Remarks; Acknowledgments; References; 4 Supported Organocatalysts as a Powerful Tool in Organic Synthesis; 4.1 Introduction; 4.2 l-Proline and its Derivatives on Ionic Liquid-Modified Silica Gels; 4.3 Polystyrene-Supported Proline as a Versatile and Recyclable Organocatalyst; 4.3.1 Nonasymmetric Reactions; 4.3.1.1 - Selenenylation of Aldehydes; 4.3.1.2 Baylis-Hillman Reaction; 4.3.2 Asymmetric Reactions; 4.3.2.1 Aldol Reaction
4.4 Prolinamide-Supported Polystyrenes as Highly Stereoselective and Recyclable Organocatalysts for the Aldol Reaction

Sommario/riassunto

Written by some of the most talented young chemists in Europe, this text covers most of the groundbreaking issues in chemistry. It provides an account of the latest research results in European chemistry based on a selection of leading young scientists participating in the 2008 European Young Chemists Award competition. The contributions range from self-organization to new catalytic synthetic methodologies to organocatalysis. In addition, the authors provide a current overview of their field of research and a preview of future directions.For organic, catalytic, natural products and biochem