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Nota di contenuto	Nanoparticles and Catalysis; Contents; Preface; List of Contributors; 1 Transition-metal Nanoparticles in Catalysis: From Historical Background to the State-of-the Art; 1.1 Introduction; 1.2 Historical Background; 1.3 Polymers as NP Stabilizers; 1.4 Dendrimers as NP Stabilizers; 1.5 Ligand Stabilization of NPs; 1.6 "Ligand-free" Heck Reactions using Low Pd-Loading; 1.7 The Roles of Micelles, Microemulsions, Surfactants and Aerogels; 1.8 Ionic Liquid Media for Catalysis by NPs; 1.9 Oxide Supports for NP Catalysts; 1.10 Carbon Supports for NP Catalysts 1.11 NPs of Noble Metals (Ru, Rh, Pd, Pt and Their Oxides) in Catalysis 1.12 Gold Nanoparticle-based Catalysts; 1.13 Environmental Problems: NOx Pollution and How to Remove NOx Using NP Catalysis; 1.14 Hydrocarbon Reforming: Activation of Hydrocarbons by NP Catalysts; 1.15 Surface Organometallic Chemistry on Metal NPs; 1.16 Application and Perspectives in Organic Chemistry; 1.17 Conclusion; 2 Colloidal Nanoparticles Stabilized by Surfactants or Organo-Aluminum Derivatives: Preparation and Use as Catalyst Precursors; 2.1 Background; 2.2 General Introduction; 2.3 Synthetic Methodologies

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Sommario/riassunto

Written by international experts, this monograph combines two of the most important aspects of modern chemistry, presenting the latest knowledge on these environmental friendly applications. This result is a comprehensive overview of the application of nanoparticles in catalysis, focusing on synthesis and the most important reaction types, providing all the information needed by catalytic, organic and solid state chemists, as well as those working with or on organometallics, materials scientists, and chemists in industry.
