Título: Catalysis By Gold

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Sinopsis

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Gold has traditionally been regarded as inactive as a catalytic metal. However, the advent of nanoparticulate gold on high surface area oxide supports has demonstrated its high catalytic activity in many chemical reactions. Gold is active as a heterogeneous catalyst in both gas and liquid phases, and complexes catalyse reactions homogeneously in solution. Many of the reactions being studied will lead to new application areas for catalysis by gold in pollution control, chemical processing, sensors and fuel cell technology. This book describes the properties of gold, the methods for preparing gold catalysts and ways to characterise and use them effectively in reactions. The reaction mechanisms and reasons for the high activities are discussed and the applications for gold catalysis considered.

Contents:
Introduction to Catalysis
The Physical and Chemical Properties of Gold
Physical Properties and Characterisation of Small Gold Particles
Preparation of Supported Gold Catalysts
Chemisorption of Simple Molecules on Gold
Oxidation of Carbon Monoxide
The Selective Oxidation of Carbon Monoxide
Selective Oxidation
Reactions Involving Hydrogen
The Water-Gas Shift
Reactions of Environmental Importance
Catalysis by Soluble and Supported Gold Compounds
Miscellaneous Reactions Catalysed by Gold
Commercial Applications