



## Fundamental studies focused on understanding of gold catalysis

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Condition: New. Publisher/Verlag: VDM Verlag Dr. Müller | Potential use of gold based catalysts for various environmentally friendly applications, in particular automotive catalysis and hydrogen fuel cells | Although gold is the most inert of all metals, it has some interesting properties as a heterogeneous catalyst. It becomes active, however, only if the size of the gold particles is in the nanometer range. There is a number of exciting aspects of gold catalysts that are currently attracting the interest of both academia and industry. Aiming for commercial applications of some very active gold-based catalysts, fundamental studies concerning various aspects of Au catalysis have been carried out throughout this book. The investigations have been performed using supported Au-based catalysts. Various reactions with direct relevance to air-pollution control were studied: oxidation of CO in the presence or absence of hydrogen, NH<sub>3</sub> oxidation, combustion of alkanes (CH<sub>4</sub> and C<sub>3</sub>H<sub>8</sub>) and alkenes (C<sub>3</sub>H<sub>6</sub>), and reduction of NO and N<sub>2</sub>O by hydrogen. Different aspects of these reactions were studied: (i) the effect of the Au particle size on the catalytic activity, (ii) the role of the additives on both the activity and selectivity, and (iii) the nature of the active sites of (un)promoted Au/Al<sub>2</sub>O<sub>3</sub>. |...



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