

Preface

This special issue contains one plenary lecture by Professor Frigyes Solymosi and the accepted original contributions presented at a satellite symposium of the Second Tokyo Conference on Advanced Catalytic Science and Technology (TOCAT 2) held at Kobe University on 29 August 1994. The satellite symposium was entitled 'Scientific Aspects of Practical Metallic Catalyst'.

The authors treat only the catalysts which permit characterization, in other words, which contain enough concentration of metallic ingredients on a support. In contrast, many industrial catalyst contain very small amounts of metallic ingredients (less than 0.5 wt.-%) on mechanically strong supports having high surface area, such as aluminas. These industrial catalyst sometimes have vague X-ray diffraction patterns in terms of 2θ value and/or shape of the peaks, and it is difficult to understand what the state of metallic ingredients is, i.e., whether they are metallic particles or clusters and alloyed or separate. However, these catalysts are so efficient that they are highly attractive. It may be helpful, then, to increase the concentration

of metallic ingredients to make the characterization possible, unless the selectivity of the reactions is significantly different from that of industrial catalysts. The fruitful results accumulated through the science of catalysis, which have been obtained on a well-defined surface under an ultrahigh vacuum, are applied to the evaluation of the efficiency of industrial catalysts.

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