

2-butenal, catalysed by ruthenium/silica, the addition of potassium results in a shift in selectivity towards the unsaturated alcohol, provided that the potassium is in close proximity to the ruthenium.

Further examples of the influence of promoters in hydrogenations are given in other papers. These include rhodium-tin on silica catalysts, which give high selectivities to crotyl alcohol in the hydrogenation of crotonaldehyde; the selective hydrogenation of carboxylic acids to alcohols by sol-gel ruthenium-tin catalysts; the hydrogenation of bisphenol A using lithium hydroxide as a modifier, and the influence of alloying elements on the selectivity of platinum catalysts in the hydrogenation of phenol. Other topics that are discussed in both papers and/or posters include the influences of the support and the effect of the metal particle size on a variety of reactions catalysed by the platinum group metals.

Investigations by G. Centi and G. Stella from the Department of Industrial Chemistry and Materials, Bologna, on the selective oxidation of 1-butene to 2-butanone on solid Wacker-type catalyst systems comprising palladium supported on oxides, such as vanadium oxide, concluded that the main factors affecting catalyst performance are: the low desorption rate of products and the progressive reduction of vanadium oxide to strongly adsorbed species which inhibit reoxidation.

Catalytic oxidations with air for the clean and

selective transformations of polyols are described by P. Gallezot and colleagues from the Institut de Recherches sur la Catalyse-CNRS. In particular they discuss the oxidation of glyoxal to glyoxylic acids using platinum on carbon, and the conversion of glucose to gluconic acid using a palladium on carbon catalyst impregnated with bismuth. The latter catalyst system possesses some advantages over the commercial enzymatic process in that the reaction is carried out in one step in a single vessel with high yield per catalyst weight.

Papers by G. G. Stanley from Louisiana State University, on the uses of homobimetallic cooperativity with cationic rhodium catalysts are illustrated by the enantioselective hydroformylation of vinyl acetate to give intermediates in the production of L-threonine with enantiomeric excesses of 85 per cent. This is followed by a contribution by S. Wieland and P. Panster from Degussa, on the immobilisation of noble metal complexes and heterogeneous catalysts on polysiloxane supports and their application in organic synthesis.

This volume contains a large number of contributions by experts in various fields of catalysis and as such provides a wealth of information on a wide range of aspects of catalysis. By its very nature the information within the book is somewhat fragmented, and it is difficult to find related themes which recur in the text. Apart from this, it is a useful addition to the bookshelf for those involved in catalysis. M.J.H.R.

The Fourth Grove Fuel Cell Symposium

Following the pattern of the three earlier highly successful symposia, the fourth meeting will be held at the Commonwealth Institute, London, England, from 19th to 22nd September, 1995. This fuel cell symposium is being organised by a steering committee composed of leading fuel cell scientists from both academia and industry, under the aegis of Elsevier Advanced Technology.

With the increasing interest in the efficient production of electricity combined with the introduction of legislation promoting ultra-low and zero emission vehicles, the potential market for fuel cell systems continues to grow. Internationally invited speakers, all world

authorities on fuel cell technology and exploitation, will provide an up-to-date analysis of technical developments and the opportunities for commercialisation of fuel cells; their contributions have been chosen to provide attendees with a complete picture of the progress achieved and the future prospects for fuel cell technology.

Those who would like to make poster presentations or who require further information about this symposium should contact Sharron Emsley, Fourth Grove Fuel Cell Symposium, Elsevier Advanced Technology, PO Box 150, Kidlington, Oxford OX5 1AS, U.K. Fax: +44(0) 1865 843971.