

colleagues of the University of Nagasaki. Measurements were reported by A. Percheron-Guegan and colleagues (CNRS Meudon and CEA Bruyères le Chatel), of p-c(n) isotherms of deuterium pressure/deuterium content for series of palladium-platinum, palladium-rhodium and palladium(rhodium, platinum) alloys recorded over the temperature range 10 to 100°C. An increased $\alpha \leftrightarrow \beta$ -phase deuteride transition pressure was noted with increasing alloying element content of up to ~ 10 per cent.

Electrical Resistivity

Results from 7.5 to 20 K of electrical resistivity, after hydrogen loading at 1 GPa pressure, of palladium, alloyed with nickel, ruthenium, rhodium, platinum and silver, were reported by A. Szafranski, Polish Academy of Sciences, Warsaw. Forms of the resistivity-temperature relationships were consistent with examples of Kondo Effect and spin-glass behaviour. Summaries and discussions of combined measurements of electrical resistivity-hydrogen content and p-c(n) relationships of hydrogen systems of palladium alloys with respective 4d and 5d elements paired in the same transition metal sub-group, were presented by R.-A. McNicholl and colleagues, Universities of Belfast, Jaffna and Beijing.

Permeation Membranes

Differences between the forms of p-c(n) isotherms of palladium alloy-hydrogen systems have significance for the potential utilisation of

the alloys as hydrogen permeation membranes. A paper that was presented by Professor V. A. Goltsov dealt particularly with these aspects, presenting diagnostic diagrams which suggested the relative suitabilities of alternative alloying elements from the characterisation of their hydrogen solubilities and diffusion coefficients, under various combinations of hydrogen gas pressures, temperatures and problems caused by potential catalytic poisoning and corrosion.

Alloys of palladium with elements, such as silver, having larger atomic volume than palladium, have proved to be advantageous compositions when used for hydrogen permeation membranes.

A paper by Y. Sakamoto and colleagues from the University of Nagasaki, reported on extensive comparative studies of palladium-rich "expanded" ternary alloys of types palladium-yttrium(gadolinium)-silver and palladium-yttrium-indium(tin, lead), and complementary examinations of the influence of methane additions to input hydrogen permeation gas.

It is planned that the refereed papers presented at the symposium will be published in forthcoming volumes of the *Journal of Alloys and Compounds*.

The next symposium of the series will be held during 1996 in Switzerland at a venue still to be finalised and will be under the Chairmanship of Professor L. Schlapbach of the University of Fribourg.

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The Russian contribution to our knowledge of the platinum metals is incalculable; early research by gifted individuals led to the formation of the Institute for the Study of Platinum and Other Noble Metals at Petrograd, and in turn the first journal devoted exclusively to the platinum metals was founded to publish the research results of this Institute. Indeed, until its demise in 1955, this periodical was unique.

In 1993 a new Russian journal, entitled *Rhodium Express*, was launched to report

on the co-ordination chemistry of rhodium. Although the majority of the papers published to-date have reported Russian work, enabling readers to gain an early insight of topics currently being studied there, the number of contributions from other countries is increasing with time.

Further information about this useful addition to the literature can be obtained from The Editor: Yuri S. Varshavsky, P.O.B. 77, 198013 St. Petersburg, Russia; E-mail Yuri@vniisk.spb.su; Fax: +7 (812) 251 4813.