

Industrial Fuel Cells Forum

EUREKA INITIATIVE TO HASTEN COMMERCIALISATION

American and Japanese work on fuel cells has received considerable coverage in this journal over the past decade; much less has been written about fuel cell activity in Europe. Although Elenco, Siemens and others have worked successfully on alkaline fuel cells there has been only very limited activity on phosphoric acid and other fuel cells. For these reasons a Eureka forum on fuel cells was held in London during February under the chairmanship of Dr. G. J. K. Acres of Johnson Matthey. Over 100 people from fourteen European countries attended.

Eureka is an initiative, taken by the governments of Europe, which is focused principally on the commercial exploitation of new technologies for non-military applications. Fuel cells have been identified as an opportune topic for a Eureka programme which will bring together the necessary European catalyst, electrochemical and engineering expertise. The Keynote Speech was given by Dr. D. Pollard of the G.E.C. Engineering Research Centre who noted the Japanese projection that by 1995 the market for phosphoric acid fuel cells will amount to 1000 MW/year, using platinum electrode loadings of 2g/kW.

The current situation was highlighted in papers on phosphoric acid, solid polymer and alkaline fuel cells. These systems, which are all platinum catalyst based, provide the only opportunity for short to medium term commercialisation of fuel cells. The phosphoric acid fuel cell system was described by Dr. L. J. M. J. Blomen of Kinetics Technology International, The Netherlands. His company is collaborating with Engelhard Industries to manufacture fuel cells in Europe. Their present aim is to develop a 25 kW fuel cell, intended for computer power and similar requirements, based upon a commercially available 5.6 kW unit. Dr. S. Stucki of the Brown Boverie Research Centre, Switzerland, described a solid polymer electrolyte cell which uses platinum or oxides of ruthenium and iridium loaded onto the elec-

trodes to improve the economics of this type of cell. The alkaline fuel cell was described by Dr. Van den Broeck of Elenco, Belgium, who referred to the 40 kW Elenco alkaline cell intended for stationary power generation; this will soon commence first stage trials.

Three groups of participants then explored the possibilities of formulating commercial projects between member countries. The low power (0-5 kW) session, chairman Mr P. R. Wyman of the G.E.C. Hirst Research Centre, considered the markets for small fuel cells based on their perceived advantages. Potential uses were identified at remote, unattended, telecommunication stations; for consumer leisure activities where absence of noise and pollution may be more important than initial cost; for isolated residential power supplies and for European space applications. The medium power (5-150 kW) session, chaired by Mr. K. Gussgard of the Norwegian Water Resources and Energy Administration, again identified uses which depend upon the particular advantages offered by fuel cells in this power range, including high efficiency, low maintenance requirement and clean, quiet operation. In addition to the applications identified for the smaller units, potential outlets were seen for combined heat and power systems where motor generator sets are currently used, and for powering city buses. The high power output (250 kW-11 MW) session, chairman Mr. G. Hoffmann, Ruhrgas, F.G.R., established that a significant market existed for electricity generation and district heating schemes but that collaborative projects would be necessary if Europe was to respond effectively. In particular, the limited European capability in platinum electrode and stack technology was seen as an inhibiting factor.

This forum may be seen as the key event which will stimulate European activity in this high technology business, and create a major new outlet for platinum.

J.E.P.