the surface of platinum may be vitally affected by oxidation.

Adsorbed anions and neutral molecules, as well as oxide films, markedly influence reaction rates on platinum electrodes by becoming adsorbed thereon. Thus, at Moscow, L. Müller and L. N. Nekrassov pointed out that the overall $O_2 \rightarrow OH^-$ change (which, as they demonstrated by rotating-disc experiments using the Frumkin "ring", goes through an intermediate H_2O_2 stage on platinum) is increasingly inhibited by anion adsorption in the order $SO_4^{2-} < Cl^- < Br^-$. Chu Yung-Chao reported that, in anodic persulphate formation, F^-, Cl^-, SCN^- and $CS(NH_2)_2$ have little effect on persulphate formation but markedly reduce the concomitant oxygen evolution; NH_4^+ also inhibits oxygen evolution and seems actually to stimulate persulphate formation. Breiter, in a further paper, gave evidence for increasingly strong adsorption of the halide ions in the order $Cl^- < Br^- < I^-$ and noted also that this type of adsorption inhibits both the formation and the reduction of the oxidised platinum surface, as well as inhibiting desired reactions on the platinum. Adsorption of I_2 rather than I_3^- or I^-, in a system containing all three entities, was discussed by R. A. Osteryoung, G. Lauer and F. C. Anson of the North American Aviation Science Centre, California.

With the intense interest in the surface state—especially with regard to oxidation and adsorption—of the platinum metals apparent in so many of the Moscow papers, it may be natural that the inner electronic structure of the metals received less attention than it deserves. However, J. Brenet of the University of Strasbourg pointed out that since the primary function of an inert basis for any electrode reaction is to act as an electron donor or acceptor, the distribution of electron energy levels in the inert basis must clearly have profound significance.

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The CITCE papers will be published shortly in *Electrochimica Acta*

A High Temperature Waveguide Termination

PLATINUM AS BOTH GUIDE AND HEATING ELEMENT

In measuring the output from various noise sources by means of a radiometer, a standard noise source is required to calibrate the instrument. This generally takes the form of a hot load, i.e. a termination of known temperature connected to the radiometer by a suitably matched waveguide. For most microwave receivers, a load immersed in boiling water can be used.

Because of the high noise level of microwave receivers in the short millimetric band, a relatively high output is also necessary from the standard noise source if accurate calibration of the radiometer and hence the receiver is to be achieved. This makes it necessary to operate the hot load at an extremely high temperature. In a recent paper, Q. V. Davis of the Royal Radar Establishment, Great Malvern, describes (*J. Sci. Instr.*, 1963, **40**, (11), 524) a hot load that has been developed for operation at 1250°C. This load comprises a one inch long, conically tapered rod of pyrophyllite operating at this temperature in a heated circular waveguide.

In the construction of this waveguide assembly platinum sheet 0.005 inch thick is formed around a mandrel to make the round waveguide 0.143 inch in diameter, the ends of the sheet being extended parallel to each other to copper blocks. The platinum is resistance heated by a current of 500 amp passed through the copper blocks. The whole assembly is enclosed in laminated asbestos to reduce heat losses.

J. G. W.