

## SUPPRESSION OF POLAROGRAPHIC MAXIMA

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Earlier, many addition agents employed for bright plating, corrosion inhibition etc., were chosen by trial and error or hit or miss methods. Only in recent decades compounds containing S, N, O have been specifically chosen. Attempts to understand the mode of action of these addition agents have been the arena of many electrochemists who have employed measurements of interfacial tension, electrode charge, differential capacity of the double layer, polarisation etc. A few attempts have also been made to find out the surface activity of these addition agents by trying them, as suppressants of polarographic maxima.

This paper presents the preliminary results of polarographic maxima suppression studies by select compounds which contain sulphur, nitrogen and oxygen. Though it is known that reproducibility of polarographic maximum is poor and hence quantitative analysis difficult, still using different polarographic maxima of Ni, Cu, Pb and O<sub>2</sub> the same compounds have been tried to detect surface activity and the efficiency of suppression, at least in qualitative or semiquantitative way.

It is known that the above maxima occur at different electrode potentials (*vs.* saturated calomel) of the DMF. By correlating the polarisation data of typical plating and corrosion systems containing the above addition agents with the data on suppression of the various polarographic maxima, it has been possible to predict about the activity of these addition agents. In a few cases, extrapolation of concentration of suppressant *vs.* maxima height, results in Langmuir adsorption isotherms.

**Keywords :** Polarographic Maxima; Bright Plating; Corrosion Inhibition; Langmuir Adsorption Isotherm

### Discussion

G. A. TEDORADZE (*Institute of Electrochemistry, Academy of Sciences of the USSR, Moscow*) : Are you sure, that regularities of adsorption of organic substances on the mercury can be extended to other metals ?

J. SUNDARARAJAN : Though we have ourselves mentioned that surface conditions differ from mercury to other metals, our present discussion is based on charge and potential on the mercury surface. Through null potential theory of Antropov, one can interpret this result on other metals also.