

ABSTR '513

A method and apparatus is provided for the simultaneous measurement of the general corrosion rate and the atomic hydrogen permeation rate through at least two like specimens in the same test cell, under the same conditions at the same time.

The nonconductive electrochemical test cell is adapted to receive at least two test specimens and associated electrodes and electronic and physical measuring means. One or more chemical additives can be introduced into the cell to determine their effect on inhibiting hydrogen permeation and corrosion rates as reflected by the respective measurements. This procedure can be repeated for other inhibitors, and, from the data obtained, a comparative ranking of the effectiveness of inhibitors can be assigned.