

ESD Spectra During Adsorption at 300K and Thermal Desorption of H₂/W(Poly)

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The present work is related with the EDS spectra of the H₂/W(Poly) system during the adsorption at 300 K and thermal desorption processes. Significant differences with the usual spectra already described in the literature are found. They are characterized by a decrease of the maximum of the surface ion current of H⁺, (I + (H⁺)), and a broadening of the peak with increasing pressure. Nevertheless, the ESD spectra during thermal desorption show that I + (H⁺) reaches the same maximum value, irrespectively of the value obtained during the adsorption cycle. From the simultaneous ESD and thermal desorption spectra it is possible to establish a good correlation between I + (H⁺) and p-t curves and, subsequently, with the desorbed entities (H₂). This relationship shows that there are four clearly different regions which can be assigned, at least in part, to the desorption states labelled ?1, ?2, ?3 and ?4 of polycrystalline samples. Using the I + (H⁺) signal, the desorption energies and ion cross