**Nanostructured surfaces**

**The effects of mixed thiopurine derivatives – nonionic surfactants adsorption layers on double layer parameters of the mercury/chlorates(VII) interface; dependence on the supporting electrolyte concentration**

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Studies of organic molecules adsorption on the electrodes constitute a major area of the electrochemical surface research. The properties of electrode surfaces are substantially modiﬁed by adsorbed molecules which strongly aﬀect electrode reactions. Such information can be applied for improvement of energy transformation processes, elaboration of corrosion inhibitors, control of metals electrodeposition as well as in various electroanalytical techniques.

According to the literature reports formation of mixed adsorption layers on the mercury electrode surface is associated mainly with the competitive adsorption [1]. From this group of thiopurine derivatives: 6 - mercaptopurine (6MP), 6 – thioguanine (6TG), azathioprine (AZA) are the drugs available today in the antitumor therapy [1]. The study of thiopurine derivatives adsorption at the mercury/ electrolyte interface could be interesting in relation to its activity at the biological interfaces. The addition of surfactants (TritonX – 100 or Tween 80) into the system can provide new information about interface structure, orientation of adsorbing electrode inactive molecules as well as interactions between them.

The differential capacity (Cd) of the double layer at the mercury/ supporting electrolyte interface was measured by the impedance method. The potential of zero charge (Ez) was determined using a streaming electrode. The surface tension at the potential of zero charge (γz) was measured using the method of the highest pressure inside the mercury drop presented by Schiffrin.

Clear changes in adsorptive parameters indicated changes in the structure and properties of the adsorption layer formed at the mercury/chlorates(VII) interface in the presence of thiopurine derivatives – TritonX – 114 and thiopurine derivatives – Tween 80.

[1] *A. Nosal-Wiercińska, W. Kaliszczak, M. Grochowski, M. Wiśniewska, T. Klepka*, Effects of mixed adsorption layers of 6-mercaptopurine – Triton X-100 and 6-mercaptopurine – Tween 80 on the double layer parameters at the mercury/chlorates(VII) interface // J. of Molec. Liq. – 2018 – **253** – P. 143 – 148.