

# **„The effects of the mixed adsorption layers of mercaptopurine – TritonX – 114 and mercaptopurine – Tween 80 on double layer parameters mercury/chlorates(VII) interface”**

**A. Nosal-Wiercińska<sup>1</sup>, W. Kaliszczak<sup>2</sup>, M. Grochowski<sup>1</sup>, M. Wiśniewska<sup>3</sup>,  
Y. Bolbukh<sup>4</sup>**

<sup>1</sup>*Department of Analytical Chemistry and Instrumental Analysis, Faculty of Chemistry, Maria Curie-Skłodowska University, M. Curie-Skłodowska Sq. 3, 20-031 Lublin, Poland, e-mail:anosal@poczta.umcs.lublin.pl*

<sup>2</sup>*„Herbapol – Lublin” S.A., Diamentowa 25 St, 20 – 741 Lublin, Poland*

<sup>3</sup>*Department of Radiochemistry and Colloids Chemistry, Faculty of Chemistry, Maria Curie-Skłodowska University, M. Curie-Skłodowska Sq. 3, 20-031 Lublin, Poland*

<sup>4</sup>*Chuiiko Institute of Surface Chemistry, General Naumov Street 17, 03164 Kiev, Ukraine*

Due to the widespread use of metals and the increasing aggressiveness of the environment, corrosion is worthy of notice. One of the methods for its control is the use of corrosion inhibitors. The efficiency of these substances depends on their adsorptive properties. Adsorption alters the resistibility of metal to corrosion. Particles of organic compounds adsorbed on the surface of metal change the structure of interfacial area and affect the kinetics of electrode processes, which may in many cases improve analysis.

Adsorption associated with mixed adsorption layers of mercaptopurine – TritonX – 114 and mercaptopurine – Tween 80 was studied.

The differential capacity of the double layer ( $C_d$ ) at the mercury/ supporting electrolyte interface was measured by the impedance method. For the whole polarisation range, the capacity dispersion was tested at different frequencies between 200 and 1000 Hz. In order to obtain the appropriate equilibrium values of differential capacity, a linear dependence of capacity on the square element from frequency was extrapolated to zero frequency. The potential of zero charge ( $E_z$ ) was determined using a streaming electrode. The surface tension at the potential of zero charge ( $\gamma_z$ ) 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 on the double layer mercury/chlorates(VII) interface in the presence of mercaptopurine – TritonX – 114 and mercaptopurine – Tween 80.