CHEMICALLY MODIFIED SURFACES IN ENVIRONMENTAL

ELECTROCHEMISTRY, AS AN ALTERNATIVE TO THE SUSTAINABLE

DEVELOPMENT

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ABSTRACT

We are experiencing important changes in the environment that are a consequence of the increase in anthropogenic activities, such as the excessive use of natural resources and the consequent generation of polluting emissions that seek to satisfy the needs of the human being, but at the same time affect the different strata of the environment: water, soil and air. Different research groups are developing technologies that allow the reduction of pollutant emissions into the environment, as well as the destruction of those that already exist, using individual and combined biological, physical, chemical and physicochemical treatments. Within the latter we find electrochemical treatments, which are based on the exchange of electrons to promote electronic transfers between a substrate (electrode) and the medium (organic, aqueous, or aquaorganic) in the presence of an electrolytic conductive species in solution (support electrolyte). Currently, work is being done on the construction of modified electrodes with properties that can form the basis of new electrochemical applications with innovative technological developments, where the substrate or material of an electrode to be modified can be titanium, steel, platinum, gold, graphite, glassy carbon, tin or indium oxide, which can be modified with different techniques; this molecular organization of the electrodes promotes a better electronic transfer that increases the percentages of removal of contaminants in water, soil and air in less time.

Keywords: modified surfaces, environmental electrochemistry, sustainable development,

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Topicals: modified surfaces, environmental electrochemistry, and sustainable development.

Biography

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Prof. Dr. Erika Bustos is currently a full-time researcher in the Science Department of Centro de Investigación y Desarrollo Tecnológico en Electroquímica, S. C., Mexico. She is developing the design and construction of modified surfaces for the transformation and detection of molecules with environmental importance.

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