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MODIFIED SURFACES FOR ENVIRONMENTAL ELECTROCHEMISTRY, AS AN ALTERNATIVE TO THE SUSTAINABLE DEVELOPMENT AND CIRCULAR ECONOMY IN THE REMOVAL OF POLLUTANTS IN AIR, WATER AND SOIL MATRIX

We are experiencing essential 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 human beings, but at the same time affect the different strata of the environment: water, soil, and air. Different research groups are developing technologies that reduce pollutant emissions into the environment and destroy existing ones, 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 aqua-organic) 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 air, water, and soil in less time.

Keywords

modified surfaces, environmental electrochemistry, sustainable development, and circular economy.

Reference

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