DESIGNING CHEMICALLY MODIFIED ELECTRODES FOR ATTENDING TO ALTERNATIVE ENERGY, ENVIRONMENTAL, AND PUBLIC HEALTH PROBLEMS

Prof. Dr. Juan Manríquez-Rocha

Centro de Investigación y Desarrollo Tecnológico en Electroquímica S.C., Parque Tecnológico

Querétaro s/n, Sanfandila, 76703, Pedro Escobedo, Querétaro, México

Email: jmanriquez@cideteq.mx / Phone: +524422116061

ABSTRACT

The main goal of this talk is to describe how the systemic concept of chemistry nano-architectures has been employed as the main strategy for designing chemically modified electrodes that have been employed for attending to alternative energy, environmental, and public health problems. In this way, will be shared the audience some relevant results obtained in my laboratory for preparing dendrimers-modified nanoparticulate TiO_2 photoanodes for constructing efficient dye-sensitized solar cells, Ni(II) cyclam-modified nanocrystalline TiO_2 anodes for urea oxidation and simultaneous H_2 evolution on Pt cathodes, optically transparent electrodes modified by Ag, Cu or bimetallic Ag|Cu nanoclusters for CO_2 electrochemical reduction to CO, and glassy carbon electrodes modified by dendrimers-caped Au nanoparticles for the electrochemical detection of uric acid in human serum and its application to the early diagnosis of hypo/hiper-uricemia deceases.

Keywords: chemically modified electrodes, systemic chemistry, nano-architectures, electrochemistry

Topicals: Alternative energies and environmental electrochemistry, electrochemical diagnosis of diseases.

Biography

Manríquez-Rocha, Juan
Full-time researcher, Science Department
Centro de Investigación y Desarrollo Tecnológico en Electroquímica S.C.
Querétaro, Mexico

Prof. Dr. Juan Manríquez-Rocha develops electrochemistry research at Centro de Investigación y Desarrollo Tecnológico en Electroquímica S.C., Mexico. His research has been oriented to photovoltaics, electrocatalysis, and electroanalysis, having interest in dye-sensitized solar cells construction, electrogeneration of H_2 from urea oxidation, CO_2 reduction, and electrochemical detectors for clinical diagnosis.

Contact Information:

Science Department
Centro de Investigación y Desarrollo Tecnológico en Electroquímica S.C.
Sanfandila, Pedro Escobedo, 76703
Querétaro, Mexico
Tel: +52 4422116061
Email: jmanriquez@cideteq.mx
Twitter: @jmanriquez_r
LinkedIn: https://www.linkedin.com/in/juan-manríquez-rocha-b326b3b3