

Juan Manriquez Rocha

Seminar title:

Magnetic and diamagnetic processing of TiO₂- and graphite-based electrode materials for photocatalysis and electroanalytical applications.

Seminar abstract:

The first part of this seminar will cover the magnetic processing of nanoparticulate TiO₂-based semiconductor electrodes to induce the magnetic conversion of anatase-rutile crystalline heterojunctions to anatase-baddeleyite-rutile contained in the TiO₂ grains, with the aim of achieving selective control of the photogeneration of holes and hydroxyl radicals during the photocatalytic bleaching of textile dyes in aqueous media. The second part of the seminar will cover the diamagnetic processing of graphite electrodes to induce the diamagnetic rearrangement of the graphene planes and edges contained within the graphite grains, with the aim of achieving selective control of sensitivity in the electrochemical detection of aqueous hydrogen peroxide (H₂O₂).

Title lesson on topics of common interest:

Electrochemical uric acid detection in serum blood samples for the diagnosis of hyperuricemia.