

CHEMISTRY AND EURO GREEN CHEMISTRY

May 22-23, 2019 | Rome, Italy

Laura Micheli et al., J Ind Environ Chem 2019, Volume 3 | DOI: 10.4066/2591-7331-C2-011

NOVELTIES IN THE CHARACTERIZATION AND MONITORING OF CLEANING OF ARTEFACTS

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New methodology for characterization and cleaning procedure of paper artefact are based on electrochemical sensors, in particular screen printed electrodes (SPE) coupled with a portable instrumentation. Electrochemical biosensors, based on enzymes have been successfully applied to many fields from environment to medicine from foods to pharmaceuticals. Health care is the main area of these applications; it is possible nowadays monitor, for example, blood glucose levels in diabetes by glucose biosensors or detect reliably, the urea level at home or in the hospital on patients with renal disease. Industrial applications of biosensors include the monitoring of fermentation broths or food processing procedures by detecting concentrations of glucose and/or other fermentative end products. Many of these biosensors are well suitable to be used for the characterization of several important material used in cultural heritage such as paper, paintings, textiles, metals or glass with the aim of determining their composition, health state and/or the effectiveness of conservation or restoration interventions. Opportune biosensors could be indeed applied to determine both inorganic than organic compounds present as components, pollutants or degradation products of artworks.

BIOGRAPHY

Laura Micheli is an Associate Professor at University of Rome Tor Vergata, since 2014. Her research activity is focalized on the development of disposable electrochemical tools using bio/immunosensors and interference-free biosensors, based on Screen Printed Electrodes (SPEs) for the determination of several analyte in food, in clinical and cultural heritage fields, using for their validation spectrophotometric and chromatographic methods. She is involved in the development of new analytical methods for integrated diagnostics and application of non-invasive protocols to the study of the materials of cultural heritage, with particular reference to paper and wood artworks; assessment of conservation strategies in cultural heritage, with close collaboration with restorers of library and archive artefacts in particular with ICRCPAL (Istituto Centrale per il Restauro e la Conservazione del Patrimonio Archivistico e Librario) and ISC-CNR (Istituto dei Sistemi Complessi, Centro Nazionale delle Ricerche). For her expertise, she was invited for lecture at PhD course in new technologies in cultural heritage and as keynotes in international congress.

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