J. Electrochem. Sci. Eng. **4(4)** (2014)

Open Access : : ISSN 1847-9286
https://pub.iapchem.org/ojs/index.php/JESE

EDITORIAL

Special Issue on **New achievements and methodologies of electrochemistry and electrochemical engineering in the environmental protection and pollution control**

During the last decades, many applications of Electrochemistry and Electrochemical Engineering have arisen for the characterization and remediation of environmental problems. As a result, nowadays this subject has become one of the most interesting areas of research in applied electrochemistry, with hundreds of papers published every year and many applications already available in the market. This special issue contains sixteen very valuable contributions on these topics, written by highly recognized authors and covering the most relevant areas of interest within the topic.

Environmental monitoring is a matter of the major importance because it helps to prevent and remediate pollution with the development of novel warning detection systems. For this reason, the first sets of contributions are related to characterization of environmental issues with electrochemical methods and it contains valuable information about new tools for the characterization of organics, heavy metals and sulphur.

Treatment of industrial wastes is one of the more stimulating environmental applications nowadays. Water is extensively used in industry not only as a heat exchanger fluid or a cleaning agent, but also for the production of many chemicals. As a consequence, significant volumes of wastewater are produced every day in our industries and they get into the environment after their treatment with technologies which are not always completely effective. An electrochemically-based solution to this problem is faced in this special issue with exciting contributions on electrolysis, electro-Fenton oxidation and electrocoagulation of wastewater, in which technologies for the efficient removal of dyes, persistent chemicals and inorganic pollutants are evaluated.

Finally, the last set of papers included in this special issue focusses on soil remediation and bio-electrochemical treatments. Electrokinetic soil remediation (EKSR) is one of the most motivating topics of research for electrochemical and environmental engineering in our time. Many applications are currently working at the full scale and in this issue, an authoritative review is included, in which the fundamentals and applications of the technology are clearly described.

To conclude, trying to save energy, one of the more exciting and innovative areas of research is the production of electricity from bio-electrochemical processes. Research on this topic is still at a very early stage but results are promising and the concept of producing energy directly from waste is an out breaking idea as it is explained in the last contribution of this special issue.

As a conclusion, this special issue is a very good summary of the most exciting research on electrochemistry and electrochemical engineering in the environmental protection and pollution control and, for sure, it will become a reference for many researchers in the near future.

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