
Editorial

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The increasing demands in wastewater treatment have resulted in the development of more and more physical, chemical and biological treatment processes. Among these electrochemical and photochemical treatment methods are of particular interest for the treatment or post-treatment of non-biodegradable/disintegrable compounds and substances toxic to microorganisms. The broad spectrum of different wastewater treatment methods that have come out is indicative of the diversity of types of wastewater encountered and the far sight of the scientists and engineers working in this area.

Commercial development of electrochemical technology for treating contaminated wastewater dates back to the early 1970s, when Lee first postulated the technology. The electrochemical mineralisation of organic compounds is an attractive field and requires further research. Further, development of nano electrodes and electrodes prepared by coating glass with nano-crystalline films in recent years has added new dimensions to the field. Interestingly, photochemistry also came into prominence around 1974 when Fujishima and Honda built a cell of TiO₂ as the irradiated electrode and a platinum counter electrode. The photochemical degradation of organics has been extensively studied because photochemical technologies are simple and clean, cost-effective in many applications, and often, provide the benefit of both environmental contaminant treatment and disinfection.

The combination of the photochemical and electrochemical systems, both environmentally friendly techniques, increases the rate of degradation of organic compounds. Here the scope of the present special issue has been broadened by incorporating certain papers on solid phase extraction and competitive removal of organics using different adsorbents. The special issue is an overview of those advanced water treatment processes which are currently used or proposed for the remediation of water and wastewater.

I hope that contents of this issue will stimulate further research and development of new technologies that will help environmentalists and industrialists in such a manner that protects our environment, and improves both the quality of life of human beings and the economic well being of the industries involved.