Industry Waste Water Treatment by Pulse Power Technique

Salient features	➢ A modular-type simple continuous flow reactor based on Pulse Power Technique for the treatments of industry waste water ➢ Complete removal of ECs of initial concentration 1 mg/L from lake water at a flow rate of 10 mL/min by a power dissipation of 58.67 W. ➢ More than 95% removal of ECs of concentrations 10 mg/L from distilled and lake water at a flow rate of 10 mL/min. ➢ The complete disinfection at a flow rate of 20 mL/min in both lake and river water. ➢ Depending on the nature of the ECs, the electrical energy per order pollutant removal (EEO) values ranged between 21-47 kWh/m^3 and G value between 16-37 mg/kWh in lake water sample.
Advantages	✓ Efficient continuous flow reactor for water treatment using pulsed power technology.
Process Technology / product developed by	Dr. Ligy Phillip, Department of Electrical Engineering Indian Institute of Technology (IIT), Madras, Chennai, Tamil Nadu E mail: ligy@iitm.ac.in Prof. R. Sarathi, Department of Electrical Engineering, IIT Madras, Chennai, Tamil Nadu
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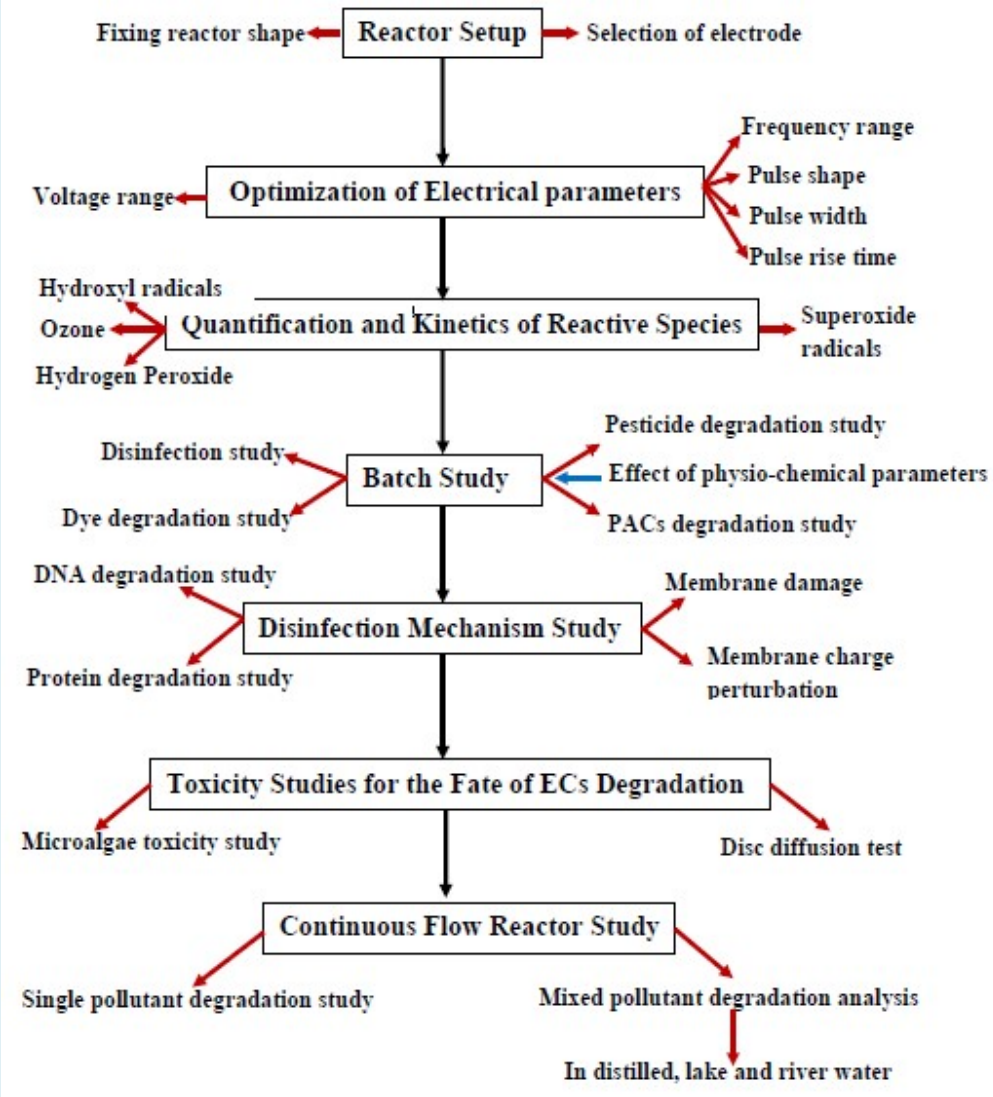
More information	**Status of commercialization / Patent / Publication** Singh, R.K., Babu, V., Philip, L. and Sarathi, R. 2016. Applicability of pulsed power technique for the degradation of methylene blue, Journal of Water Process Engineering, 11: 118-129. Singh, R.K., Philip, L. and Sarathi, R. 2016. Rapid removal of carbofuran from aqueous solution by pulsed corona discharge treatment: Kinetic study, oxidative, reductive degradation pathway and toxicity assay. Ind. Eng. Chem. Res. 55(26): 7201-7209.



Singh, R.K., Philip, L. and Sarathi, R. 2017. Rapid degradation, mineralization and detoxification of pharmaceutically active compounds in aqueous solution during pulsed corona discharge treatment. Water Research, 121: 20-36.

Singh, R.K., Philip, L. and Sarathi, R. 2017. Rapid removal and mineralization of 2,4-D in aqueous solution by pulsed corona discharge treatment: Effect of different water constituents, degradation pathway and toxicity assay. Chemosphere, 184: 207-214.

Patent

Pulsed power technology based water treatment unit for the removal of pesticides, pharmaceutically active compounds and pathogens