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Role of electrocoagulation in wastewater treatment: A developmental review (Review)

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Abstract

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Electrocoagulation (EC) is a popular wastewater treatment alternative that had been studied extensively for a wide range of wastewater types, due to its versatility, ease of setup, low footprint and eco-friendly nature. The recent studies on EC advancements on various wastewater types had been reviewed in this paper. The operational variables that are vital to EC and the fundamental relationship of EC with conventional chemical coagulation had been assessed as they are the primary factors that govern the pollutant removal mechanism of the process. Hence, EC needs further studies for optimisation of its process parameters and modelling for scale up in the industrial level. Moreover, this paper reviews the current emerging hybrid technologies of EC with integrated separation technologies and their limitations for enhanced wastewater treatment systems for cleaner effluents, water reclamation and recycle. The current prominent hybrid EC processes under research include: EC-adsorption, EC-peroxidation, EC-chemical coagulation (CC), photovoltaic EC and EC-membrane. Due to the overall low footprint requirement, environmental sustainability and strong potential of constant operation without needing extensive control, hybrid EC-membrane process undeniably stands out to be the future of wastewater treatment. © 2020 Elsevier Ltd

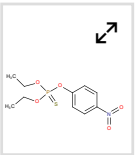
SciVal Topic Prominence

Topic: Electrocoagulation | Textile Wastewater | Decolorization

Prominence percentile: 98.857

Chemistry database information

Substances



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