Title (14)	:	**Mechanism of Surface Construction of Palm Oil Mill Effluent Sludge Biochar-Based Catalytic for Peroxydisulfate Activation**
Journal	:	Materials Innovations and Solutions in Science and Technology With a Focus on Tropical Plant Biomaterials
Document Type	:	Book Chapter
Publisher	:	Springer
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Link to Full Text	:	https://link.springer.com/chapter/10.1007/978-3-031-26636-2_20
Link to Scopus Preview	:	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85151257126&doi=10.1007%2f978-3-031-26636-2_20&partnerID=40&md5=683f75fc8c4182165c5dcbfc8867579f
Abstract	:	Numerous studies have shown that advanced sulfate-based oxidation processes are one of the new methods of wastewater treatment processes. Sulfate radicals are generated during the process and are more favorable than hydroxyl radicals. The primary focus of this research is to determine the feasibility of nitrogen-doped biochar from palm oil mill effluent (POME) sludge to act as a catalyst in activating the sulfate radical. Besides, this study also focuses on determining the efficiency of nitrogen-doped POME biochar in the removal of methylene blue under various optimal conditions. POME sludge was converted into biochar, and the surface was nitrogen-doped with ammonium chloride. The biochar was then characterized using Fourier transform infrared spectroscopy (FTIR). This study was conducted based on 3 ratios of ammonium chloride-doped process; 25:75, 50:50, and 75:25 N-doped biochar. The pH, dosage of N-doped biochar, and concentration of peroxydisulfate (PDS) were determined. From the experimental results, the optimum conditions were pH 3, 8 mM PDS concentration, and 0.1 g 75:25 biochar: ammonium chloride ratio. The rate of removal efficiency based on optimized conditions was achieved at 81 ± 0.4%.