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## BLENDING AND THERMAL STABILITY STUDIES OF A COMPOSITE BIOPOLYMERIC MATERIAL FOR THE REMOVAL OF TOXIC POLLUTANTS IN PHARMACEUTICAL EFFLUENTS

Thursday, 7 July 2022 12:00 (15 minutes)

Pharmaceutical industries produce a wide range of pollutants in the form of effluents that have a negative impact on environmental health, resulting in not only a significant economic loss but also a violation of the human right to clean and safe water. These wastes contain significant levels of volatile organic chemicals (VOC) (e.g., benzene, toluene, and ethylbenzene). A kind of biopolymer composite materials with variety of reinforcements and fillers are fabricated, via Spark Plasma Sintering (SPS), characterized (using FT-IR, SEM, N<sub>2</sub>-BET, and XRD), and made to remove VOC in pharmaceutical effluents. Besides, the thermal stability of the biocomposite was investigated. A GC-FID instrument was used for VOCs quantification after the batch adsorption experiments. The results showed that for all of the tested VOCs, benzene, toluene, and ethylbenzene, the synthesized biopolymer composite material demonstrated good removal capacity in excess of 95%, indicating that this material is a promising adsorbent for the removal of volatile organic compounds.

**Apply to be considered for a student ; award (Yes / No)?**

Yes

**Level for award;(Hons, MSc, PhD, N/A)?**

MSc

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