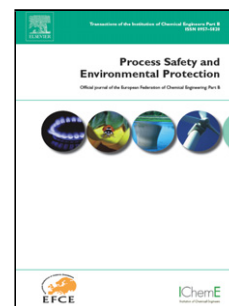


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REVALORIZATION OF AGRO-INDUSTRIAL EFFLUENTS BASED ON GALLIC ACID RECOVERY THROUGH A NOVEL ANIONIC RESIN

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Highlights

- Gallic acid removal and recovery through a strong-base anion exchange resin.
- Langmuir isotherm provided the best correlation for experimental data.
- Second-order model described with utmost accuracy gallic acid uptake.
- Gallic acid uptake is a spontaneous process for Dowex 21K XLT resin.
- Recovery efficiencies of gallic acid about 100% after 120 min regeneration time.

Abstract

Gallic acid is a natural polyphenol with important biological implications. Nevertheless, gallic acid present in agro-industrial wastewaters is considered like a micropollutant, due to its toxicity above certain levels. Therefore, recovery of gallic acid from these effluents is interesting both from industrial and environmental points of view. Industrially, it is attractive the recovery of polyphenols and the obtainment of added value products. On the other hand, from the environmental point of view it is always welcome the decrease of the contaminant charge of an effluent, which could be, for instance, further reused for irrigation. In this work, the adsorption of gallic acid on a

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