

Environmentally friendly biochar catalysts derived from sewage sludge: a step forward for more sustainable platform molecules conversion

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Abstract

Furfural holds significant importance as a biobased building block, enabling the production of various value-added compounds for the fine chemical industry, biofuels, and biopolymers via catalytic pathways. Developing more cost-effective and sustainable catalysts to facilitate furfural conversion reactions in alignment with Green Chemistry principles is crucial, promoting the creation of biobased products through environmentally-friendly methods. In this context, sewage sludge-derived biochars emerge as promising materials for catalyzing furfural conversion reactions due to their abundant metal content and organic structure, providing both acid and basic surface sites. This study highlights the utilization of two sewage sludge-derived biochars as catalysts for furfural conversion, representing a promising application of these solids.