

- Bioleaching of sediment particles after the washing cycle can improve zeolite synthesis by introducing grooves on the CFA substrate, which are effective in subsequent synthesis processes, such as alkaline-assisted hydrothermal synthesis, offering a promising avenue for the production of reproducible pure zeolites.
- Pellets generated at the end of the flowsheet have been shown to contain critical elements, including REEs, and can be extracted using biosorption, which could prove to be an alternate source for the production of advanced materials.
- The use of biometallurgical processes in flowsheets significantly improves their environmental benignity, enabling the replacement of energy-intensive processes such as acid leaching and grinding with more sustainable alternatives.

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