

Materials Science & Engineering

Thesis Defense

Investigation of Amine-Functionalized Polystyrene Networks for Structure, Property, and Performance Relationships in Gas Capture Applications

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Abstract

Polymer chemistry is used in a wide range of applications and a growing need for its use in direct air capture technology exists as society implements potential solutions to mitigate human-caused climate change and its consequences. Polystyrene networks functionalized with quaternary ammonium groups are known to be agents of capturing and releasing carbon dioxide via a moisture swing mechanism; they are referred to as polymeric sorbents. In this study, microstructural analysis of these sorbents is conducted using known characterization techniques to better understand the chemisorption process and how to optimally design these sorbents for the uptake of carbon dioxide.

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Zoom Link: <https://asu.zoom.us/j/5521190598?omn=87514870341>