



Contribution ID: 982

Type: **Oral Presentation**

Porous Graphene Oxide Macrostructures for Water Treatment Applications

Monday, 22 May 2023 09:10 (40 minutes)

Providing clean, safe water reliably in an affordable manner is a major global challenge. A wide variety of water pollutants, including heavy metals, dyes, pesticides, and pharmaceutical compounds pose a threat to public and environmental health. Existing water treatment technologies do not adequately meet water quality standards for removal of the diverse range of contaminants; thus, technological innovation is needed to enhance water security and accessibility. Engineered nanomaterials, such as graphene oxide (GO), offer tunable multifunctionality for effective removal of a diverse range of contaminants from water. However, the practical implementation of nanomaterials such as GO in water treatment requires their immobilization into three-dimensional macrostructures which may impair their performance. Unlike colloidal nanomaterials, solid macrostructures of GO can be easily stored, transported and manipulated. Despite the progress on forming high surface area and multifunctional GO macrostructures, synthesizing mechanically robust porous macrostructures, especially for wet applications, is a challenge. This talk will describe approaches for the preparation of GO-based macrostructures that can be used in water treatment. The functionalization of macrostructures of engineered nanomaterials with antimicrobials for prevention of biofouling or removal of pathogens from contaminated waters will also be discussed.

Participation

In-Person

References

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Energy Transition Focused Abstracts

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Track Classification: (MS24) Invited and Plenary Sessions