Special Issue

Adsorbent Materials for Water Treatment: Innovations in Pollutant Removal

Message from the Guest Editors

The quest for innovative water treatment solutions, especially pollutant removal, has advanced adsorbent materials. This Special Issue provides an overview of recent research. **Key Highlights:**

- **Nanotechnology:** Nanoparticles enhance adsorption capacities.
- **Electrochemical and Sorption Methods:** Effective at removing pollutants through degradation.
- **Hybrid Systems:** Combining treatments like adsorption with biological processes boosts efficiency.
- **Green Remediation:** Eco-friendly strategies include bioremediation for sustainability.
- **Machine Learning and AI:** Improved models for pollutant behavior and optimized conditions.
- **Emerging Adsorbent Materials:** New materials like biochar and MOFs enhance pollutant capture.
- **Starch-Based Adsorbents:** Modified starch is a cost-effective, biodegradable option.
- **Bioadsorption:** Biological materials are noted for their natural pollutant affinity.
- **Regeneration and Recycling:** Reusing spent adsorbents reduces waste and costs.
- **Interdisciplinary Approaches:** Collaboration fosters innovation.

This Special Issue highlights groundbreaking findings in adsorbent materials crucial for tackling global water pollution challenges.

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