

Special Issue

Low-Carbon/Novel Water-Treatment Technologies and Resource Recovery from Sludge

Message from the Guest Editors

Urban water infrastructure is at a tipping point: four billion people live in cities, and another two billion will arrive. Conventional wastewater treatment—characterized by high energy consumption, heavy chemical use, and a linear design—consumes 1–3% of national electricity and generates up to 5% of greenhouse gas. The challenge is how to treat wastewater with lower carbon and inputs, while converting “waste” streams into circular water–energy–material factories compact enough to account for the density, land scarcity, and carbon-neutral pledges of future megacities. In this Special Issue, both original research articles and reviews are welcome. Topics of interest include but are not limited to:

- Process intensification: Mainstream anammox, partial denitrification/anammox, aerobic granules, advanced oxidation, and electrochemical techniques or membrane processes.
- Resource recovery: Struvite, alginate-like exopolymers, cellulose, dissolved methane, hydrogen, or metals from sludge.
- Disinfection and organic micropollutant degradation with minimal carbon collateral: UV-LED/free chlorine, peracetic acid, or green oxidants.

We look forward to receiving your contributions.

Guest Editors

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Editor-in-Chief

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