

# Thermochemical sludge conversion through hydrothermal liquefaction

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The NSERC/Metro Vancouver Senior Industrial Research Chair (IRC) program in Advanced Resource Recovery from Wastewater (January 2020 – January 2025, total budget of \$2.7M) builds on strong collaboration established between Bioreactor Technology Group (BTG) on

University of British Columbia's Okanagan Campus and Metro Vancouver since 2013. The ongoing program has a number of research topics which are focused on advancing wastewater treatment processes for more efficient contaminant removal, energy conservation/production, resource recovery and mitigation of trace of contaminants of emerging concern (TCECs). Two novel sludge conversion research themes are assessed: (1) Thermochemical sludge conversion through hydrothermal liquefaction; (2) Biochemical sludge conversion through bioaugmented anaerobic digestion.

## Challenges and opportunities

Laboratory- and pilot-scale testing incorporated into the IRC program enable the evaluation of novel sludge conversion processes "offline" without risking ongoing operations at Metro Vancouver's wastewater treatment plants (WWTPs). The timing of this IRC program is crucial as Metro Vancouver's Liquid Waste Services Department is about to embark on a 15-year, \$4 billion of capital infrastructure upgrade program of its existing WWTPs. Key decisions are informed by the findings through this IRC program. Furthermore, insights from this IRC are invaluable to other municipalities across Canada and the world.

### Links:

[Research Profile](#)  
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