

Developing Exposure and Toxicity Data for Trace Organic Chemicals in Wastewater, Biosolids and Soils

Bice Martincigh, University of KwaZulu-Natal, Durban, South Africa



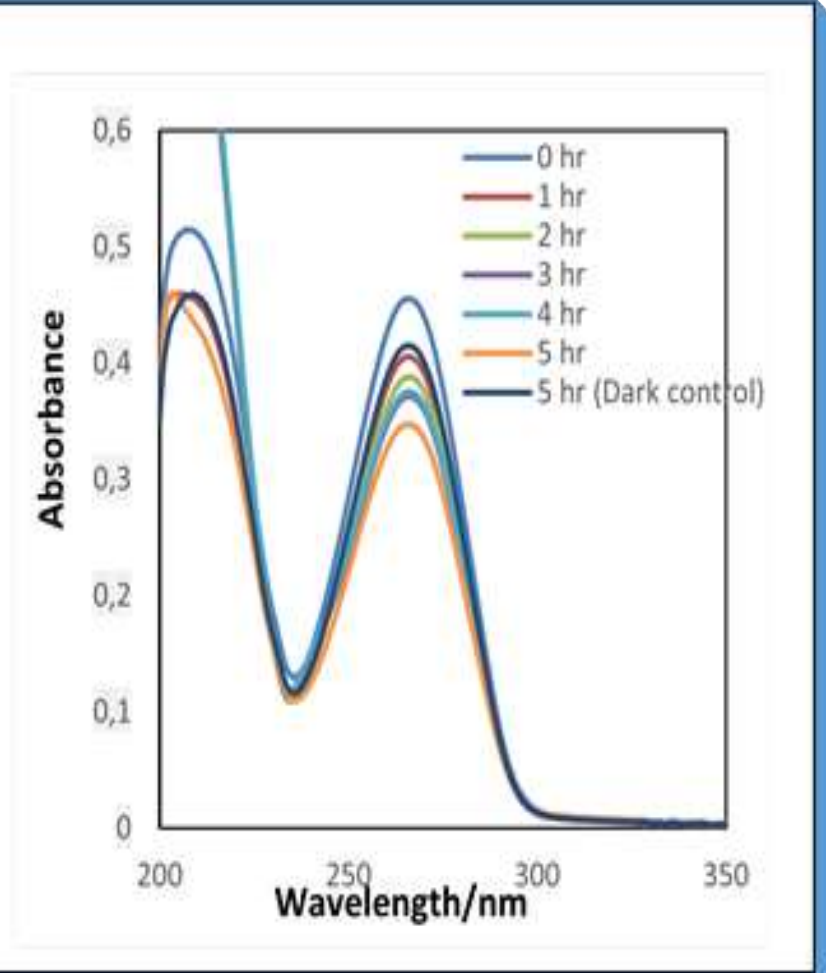
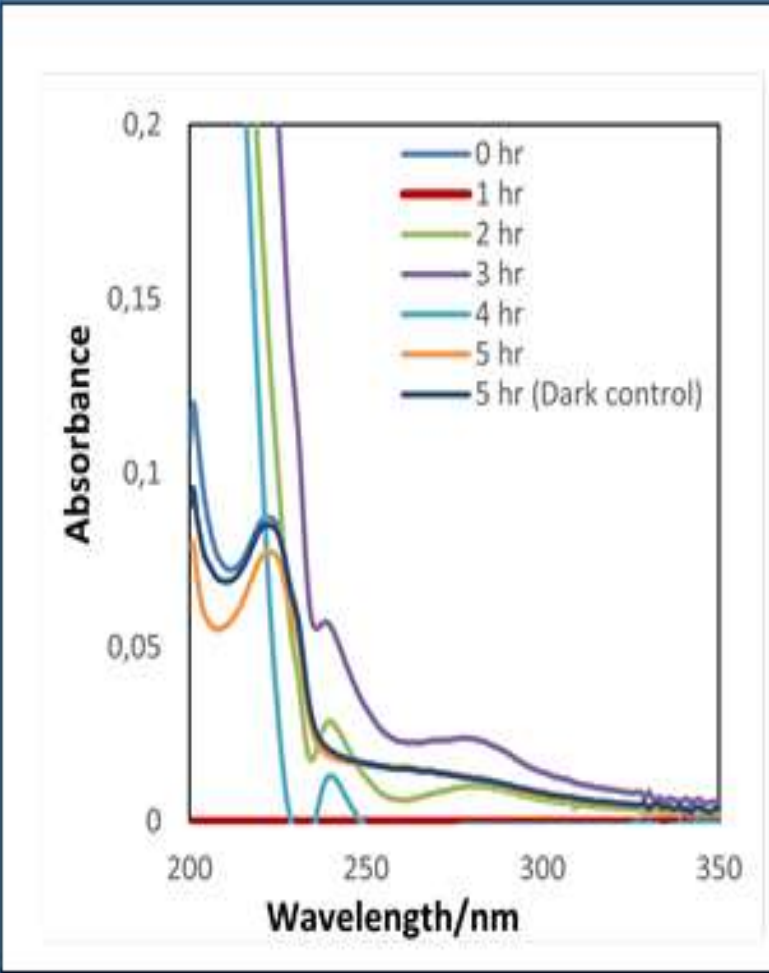
flame retardants

antibiotics and HIV-ARV drugs



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7.00 8.00 9.00 10.00 11.00 12.00 13.00 14.00 15.00 16.00 Time



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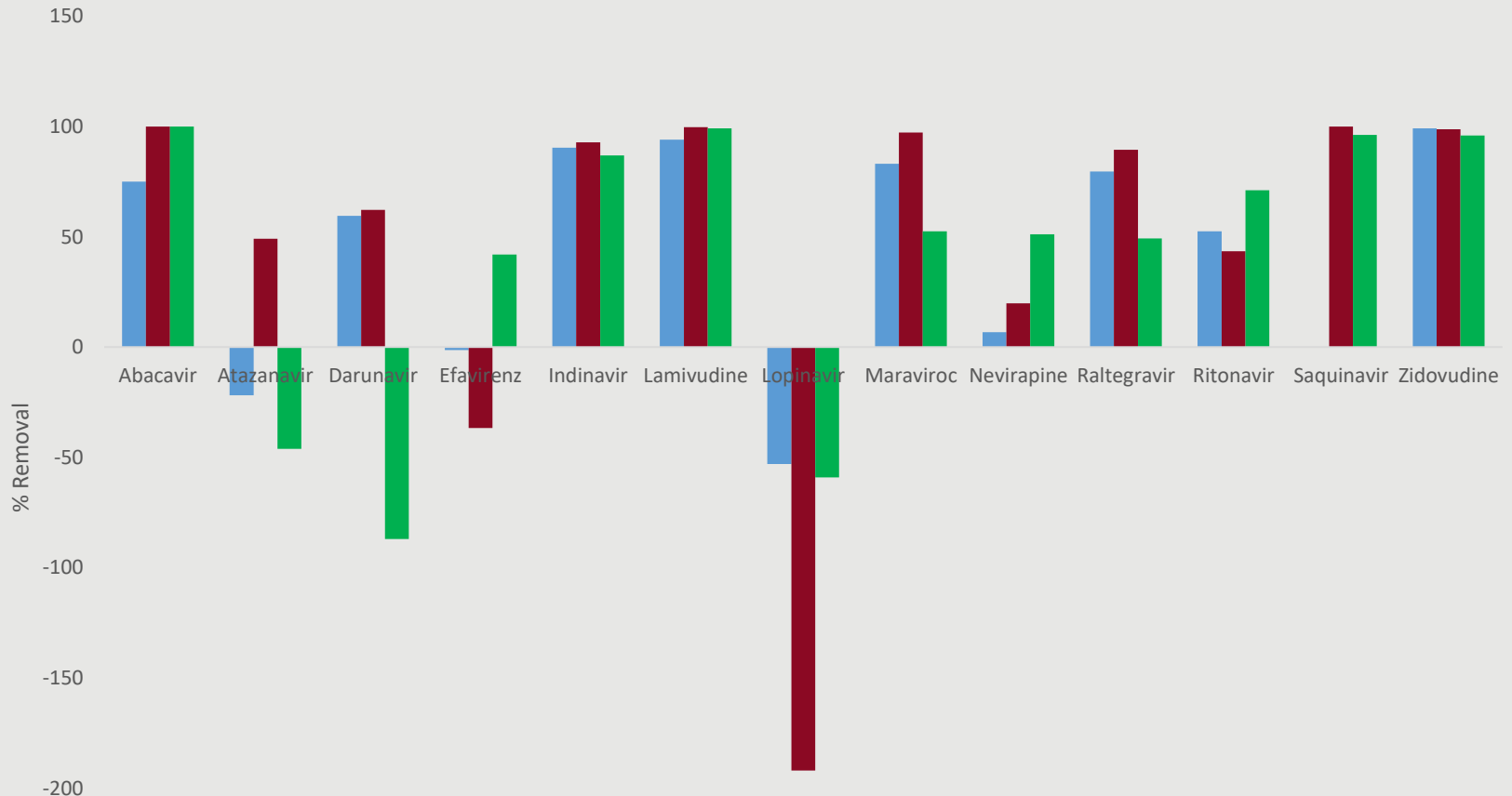
Key results so far:

- Generally, the treatment techniques applied in the WWTPs appear to be effective for the removal of most of the ARV drugs with the exception of atazanavir, efavirenz, lopinavir and nevirapine that were persistent in the effluents from all WWTPs.
- The high concentrations of efavirenz are a particular cause for concern with the introduction of FDC therapy that includes this drug in the single tablet. The presence of this recalcitrant ARVD is consequently likely to increase.
- The similarity in removal rates between conventional and DEWATS WWTPs allows new insights for planning local wastewater treatment, and potential reuse applications, in peri-urban areas that are not served by conventional sewer lines.



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■ DEWATS ■ Northern WWTP ■ Phoenix WWTP

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Top next steps for your project:

- Complete sampling and all steps required for analysis
- Evaluate risk

How data and results from your project will impact stakeholder decisions and the development problem:

- Data will inform municipality whether the current treatment is effective for trace organic chemicals/emerging contaminants

Challenges you have faced in collecting meaningful data:

- Difficulties with access to sites and meaningful sampling methods