

17<sup>th</sup> International Conference on

# Industrial Chemistry and Water Treatment

May 21-22, 2018 | New York, USA

## Determination of personal care products and pharmaceuticals in river sediments, KwaZulu-Natal, South Africa

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A quantitative method is described for ultrasonic-assisted solid-phase extraction (SPE) followed by GC-MS after derivatization for the simultaneous analysis of personal care products and pharmaceuticals (PCPPs); propyl paraben, triclosan, caffeine, carbamazepine and chloramphenicol. Ultrasonic combined with centrifuge were used to extract sediments samples collected from Mgeni and Msunduzi River. An SPE procedure was used for clean-up and to concentrate selected compounds from diluted aqueous extracts. Final extracts were derivatized with BSTFA and analyzed with GC-MS in selected ion monitoring (SIM) mode. The recoveries of the analytes ranged from 66% to 108%. The method detection limits were 0.08–1.82 ngg<sup>-1</sup> and quantification limits 0.42–5.51 ngg<sup>-1</sup>. The proposed method was applied in the evaluation of two rivers over three month period in KwaZulu-Natal, South Africa. All targeted compounds were present in the environment at concentration level between not detected to 174 ngg<sup>-1</sup>. To our knowledge, this is a first report on the simultaneous determination these PCPPs by GC-MS in Africa.

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