Bio-crude production through aqueous phase recycling of hydrothermal liquefaction of sewage sludge

Ayaz A. Shah ^{1,2}, Saqib S. Toor ¹, Tahir H. Seehar ^{1,2}, Rasmus S. Nielsen ³, Asbjørn H. Nielsen ⁴, Thomas H. Pedersen ¹, and Lasse A. Rosendahl ^{1,*}

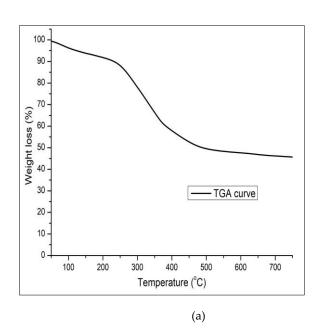
- ¹ Department of Energy Technology, Aalborg University, Pontoppidanstræde 111, Aalborg, 9220, Denmark.
- Department of Energy & Environment Engineering, Dawood University of Engineering & Technology, New M. A. Jinnah Rd, Jamshed Quarters Muslimabad, Karachi, Karachi City, Sindh 74800, Pakistan.
- ³ Department of Chemistry and Bioscience, Aalborg University, Fredrik Bajers Vej 7H, Aalborg, 9220, Denmark.
- ⁴ Department of Civil Engineering, Aalborg University, Thomas Manns Vej 23, Aalborg, 9220, Denmark.
- * Correspondence: lar@et.aau.dk; Tel.: (+45-21451114).

Supplementary material

SS: Sewage sludge

TGA: Thermogravimetric analysis

DTG: Differential Thermogravimetric analysis



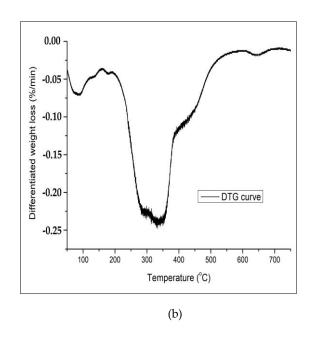


Figure S1. Thermogravimetric curves for SS, (a) TGA, and (b) DTG.

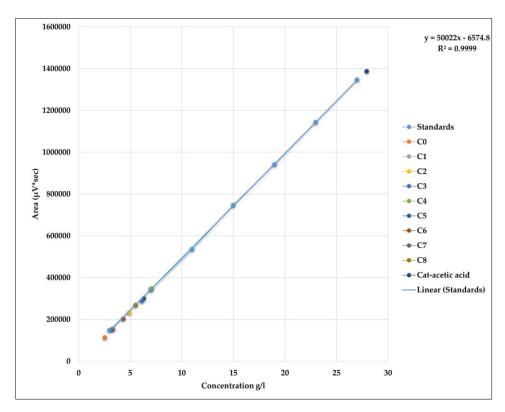


Figure S2. Calibration curve and the concentration of acetic acid in aqueous phase at different recycles.

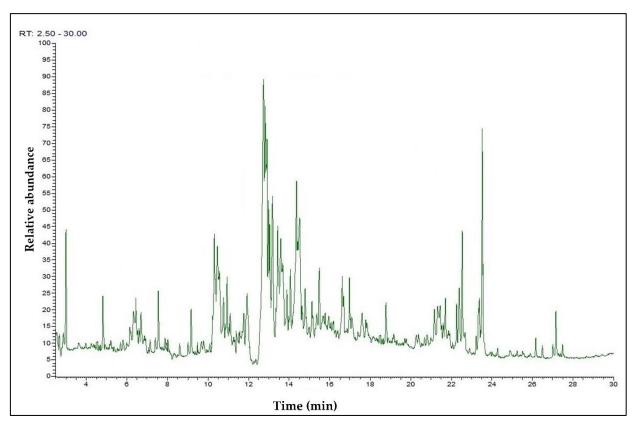


Figure S3. Chromatogram of aqueous phase produced from second recycle C2.