

Nutrients Recovery from Wastewater using Integrated Vacuum and Direct Contact Membrane Distillation

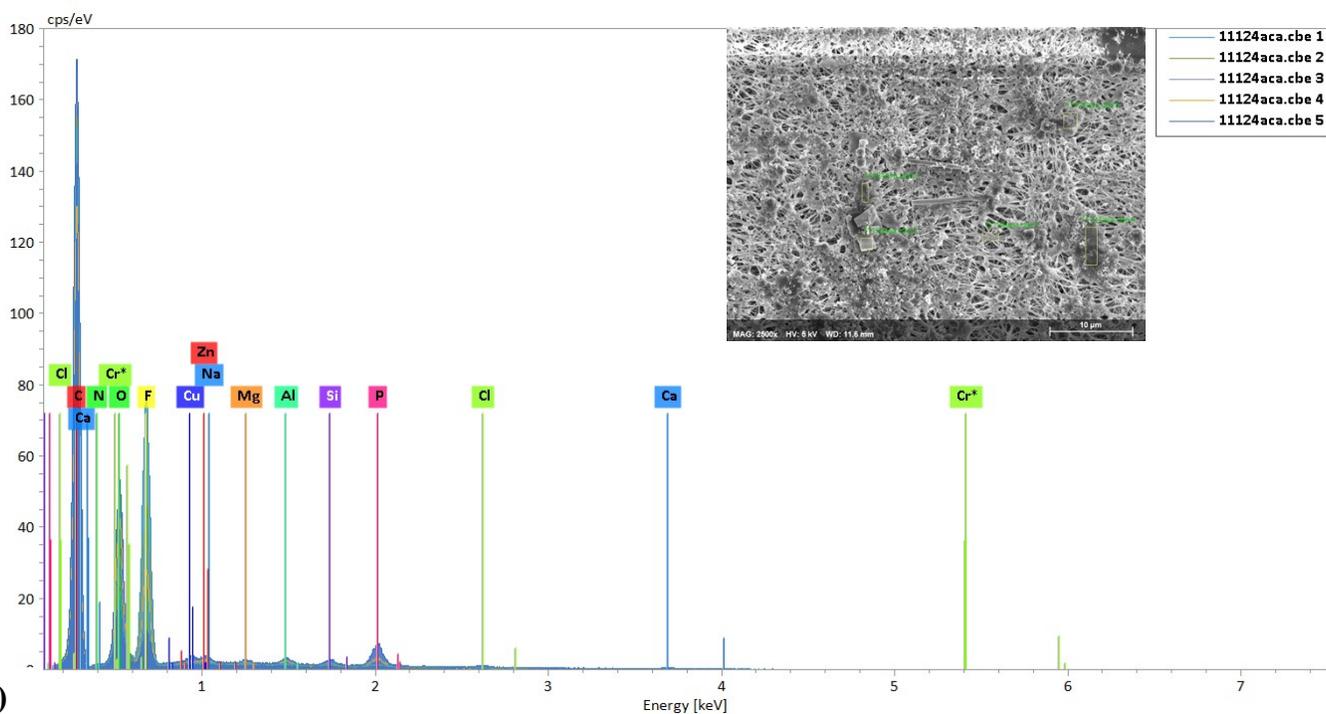
A. Tahir, S. S. Mathew, S. Abdelsalam, H. G. Gomaa*, M. B. Ray*

Chemical and Biochemical Engineering Department, Western University

London, ON, Canada, N6A 5B9

*Corresponding author: mbhowmic@uwo.ca, hgomaa@uwo.ca

a)



b)

Normalized mass concentration [%]

Spectrum	Carbon	Nitrogen	Oxygen	Fluorine	Sodium	Magnesium	Aluminium	Silicon	Phosphorus	Chlorine	Calcium	Chromium	Copper	Zinc
11124aca.cbe 1	36.5		10.9	52.0				0.4	0.2			0.0		
11124aca.cbe 2	43.5	0.5	16.5	37.6				0.3	0.8	0.7		0.0	0.1	
11124aca.cbe 3	44.8	3.2	20.5	27.1	0.2		0.3	0.8	2.0	0.6		0.0	0.6	
11124aca.cbe 4	38.2	2.4	28.2	23.9		0.2	0.7	0.9	2.7	0.6		0.0	1.0	1.2
11124aca.cbe 5	42.3	0.5	31.3	7.5		0.3	0.8	1.7	5.8	1.1	5.1	0.0	1.9	1.7
Mean	41.0	1.6	21.5	29.6	0.2	0.3	0.6	0.8	2.3	0.7	5.1	0.0	0.9	1.5
Sigma	3.5	1.4	8.4	16.5	0.0	0.1	0.3	0.5	2.2	0.2	0.0	0.0	0.7	0.3
SigmaMean	1.6	0.6	3.7	7.4	0.0	0.0	0.1	0.2	1.0	0.1	0.0	0.0	0.3	0.2

Figure S1 a) EDS spectrum of the fouled membrane and b) corresponding elemental composition.