Supplementary Information

Increased applied voltage in the presence of GAC enhances microbial activity and methane production during anaerobic digestion of food waste

Moustapha Harb¹, Noel Ermer^{2,3}, Christelle B. Sawaya¹, and Adam L. Smith^{*,2}

¹ Department of Civil and Environmental Engineering, Lebanese American University, 309 Bassil Building,

Byblos, Lebanon 2038-1401

² Astani Department of Civil and Environmental Engineering, University of Southern California, 3620

South Vermont Avenue, Los Angeles, CA, USA 90089

³ Marymount High School, 10643 Sunset Boulevard, Los Angeles, CA, USA 90077

*Corresponding author: Adam L. Smith 3620 South Vermont Avenue, Los Angeles, CA, USA 90089 Phone: 213-740-0473 Fax: 213-744-1426 Email: smithada@usc.edu

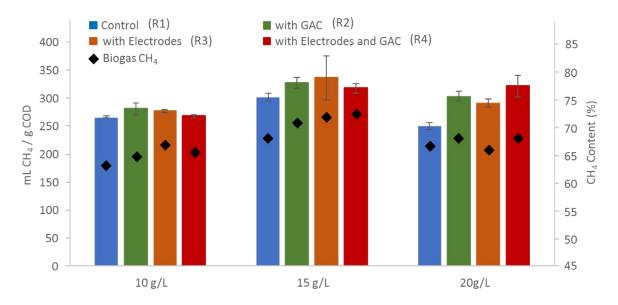


Figure S1 Total methane produced and measured biogas methane content (%) from each reactor (R1 through R4) at voltage 1.75V under increasing food waste organic loading rates of 10, 15, and 20 g COD/L of reactor.

Table S1 Average and maximum current densities measured for both the BES anaerobic digester without GAC (R3) and the BES anaerobic digester with GAC (R4) at applied voltages of 1.25V, 1.75V, 2.25V, 2.75V under 10 g/L OLR conditions.

	1.25V		1.75V		2.25V		2.75V	
	R3	R4	R3	R4	R3	R4	R3	R4
Avg. Current Density (A m ⁻²)	4.8	8.2	4.1	7.5	3.9	7.3	-	7.2
Max. Current Density (A m ⁻²)	13.5	18.9	14.2	23.4	12.1	18.6	-	22.8