## **Supporting Information**

Strategy to enhance semicontinuous anaerobic digestion of food waste via exogenous additives: Experimental and machine learning approaches

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Fig. S1 SEM images of the additives.



Fig. S2 Nitrogen adsorption-desorption isotherms: (a) metal material, (b) the additives.



**Fig. S3** The XPS spectra of metal material and the additives. (a) Full spectrum of metal material and (b) Fe 2p of metal material. (c) Full spectrum of additive, (d) Fe 2p of additive, (e) Al 2p of additive and (f) Si 2p of the additives.



Fig. S4 XRD patterns of the additives, with Fe peaks labeled as\*.

## Table S1

Туре	BET	Pore volume	Pore size
	$(m^{2}/g)$	$(cm^3/g)$	(nm)
Metal material	1.024	0.001246	4.863
The additives	5.471	0.01430	10.457

The pore structure parameters of metal material and the additives.