

Supplementary material

Enhanced biodegradability in soil of chicken feather by steam explosion for potential application in agricultural biodegradable plastics

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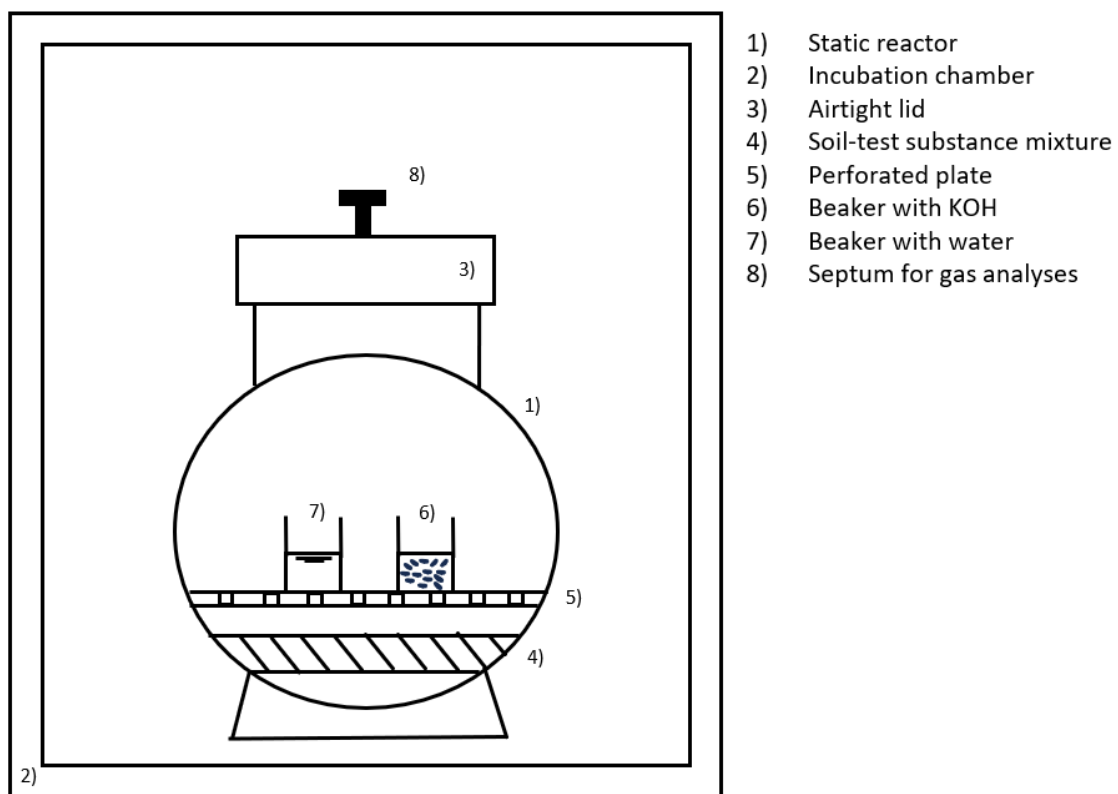


Figure S1. Diagram of the Biodegradation test setup

Table S1. Elemental analysis of raw and treated feathers at different SE conditions.

Reference	Content (%)				
	N	C	H	S	Others
Raw chicken feathers	14.6	48.2	7.2	2.3	27.7
CF-SE-160°C-2min-0.5mm	14.4	48.2	7.3	2.2	27.9
CF-SE-160°C-4min-0.5mm	14.3	46.8	7.4	2.1	29.4
CF-SE-180°C-2min-0.5mm	14.4	47.6	7.3	2.0	28.7
CF-SE-190°C-4min-0.5mm	14.9	48.7	7.3	1.8	27.3

Table S2. Initial degradation and maximum degradation temperature of feather treated with different SE conditions

Reference	Severity factor	Td _{5%} (°C)	Td _{10%} (°C)	Td _{max1} (°C)
Raw Chicken feathers	-	53	165	316
CF-SE-160°C-2min-0.5mm	2.07	59	183	322
CF-SE-160°C-4min-0.5mm	2.37	63	185	321
CF-SE-180°C-2min-0.5mm	2.66	69	189	323
CF-SE-190°C-4min-0.5mm	3.25	74	190	324

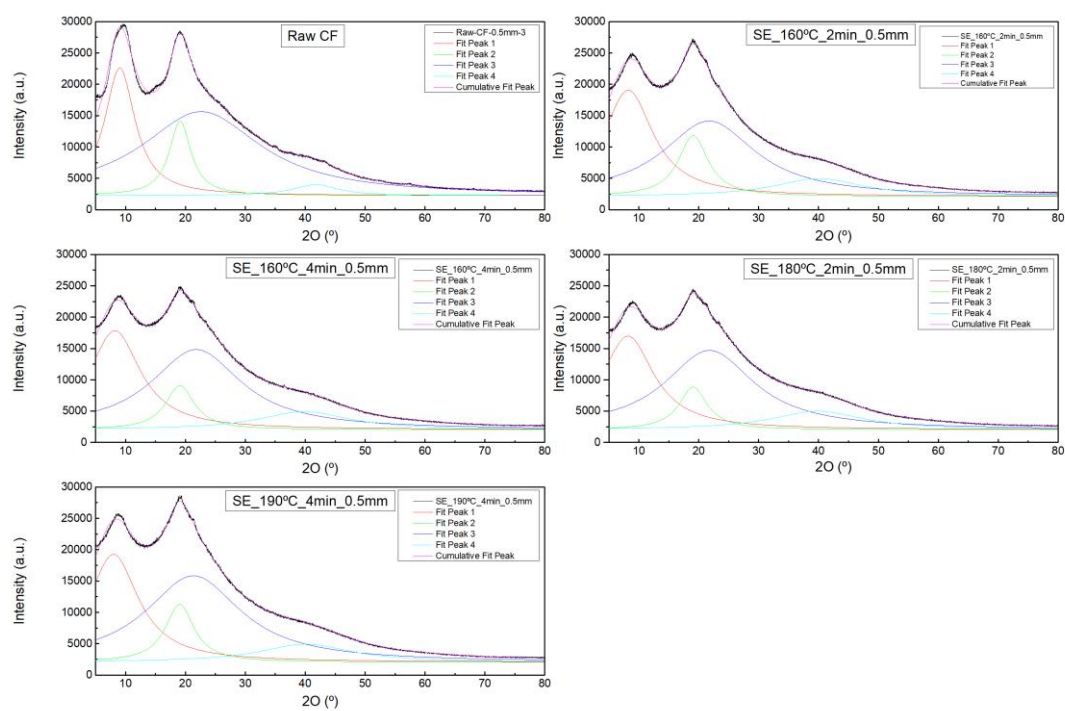


Figure S2. Representative deconvolution of XRD diffractograms of raw and SE feathers.