

Table S1. Elemental and Proximate analysis of MSW after torrefaction for each experimental run.

T	Elemental analysis (wt.%, dry basis)					MC (wt.%, dry basis)	Proximate analysis (wt.%, dry basis)			HHV (MJ/kg)	Theoretical HHV (MJ/kg)
	C	H	N	O	S		FC	VM	Ash		
<i>1st experimental run</i>											
200	45.0±0.9	7.9±0.2	0.78±0.0	46.3±0.9	0.3±0.0	44.0±0.9	7.0±0.2	44.9±0.9	3.9±0.08	24.9±0.5	20.1±0.5
250	48.1±0.9	7.2±0.2	0.83±0.0	43.6±0.9	0.28±0.0	41.9±0.9	8.3±0.2	44.7±0.9	5.2±0.1	24.9±0.5	20.7±0.5
300	52.7±1.0	6.8±0.2	0.84±0.0	39.5±0.9	0.21±0.0	38.7±0.9	10.1±0.2	44.3±0.9	6.9±0.1	25.1±0.5	22.2±0.5
<i>2nd experimental run</i>											
200	48.1±0.9	7.8±0.2	0.81±0.0	43.2±0.9	0.31±0.0	45.1±0.9	7.9±0.2	43.2±0.9	3.9±0.08	24.0±0.5	21.4±0.5
250	48.0±0.9	7.0±0.2	0.79±0.0	43.9±0.9	0.23±0.0	41.4±0.9	8.0±0.2	45.5±0.9	5.2±0.1	24.8±0.5	20.4±0.5
300	53.1±1.0	6.1±0.2	0.82±0.0	39.7±0.9	0.21±0.0	38.3±0.9	10.0±0.2	44.8±0.9	6.9±0.1	25.0±0.5	21.5±0.5
<i>3rd experimental run</i>											
200	43.8±0.9	7.9±0.2	0.79±0.0	47.4±0.9	0.28±0.0	44.8±0.9	7.1±0.2	44.2±0.9	3.9±0.08	24.7±0.5	19.7±0.5
250	48.1±0.9	7.6±0.2	0.85±0.0	43.3±0.9	0.28±0.0	41.2±0.9	8.7±0.2	43.6±0.9	5.5±0.1	24.0±0.5	21.0±0.5
300	52.8±1.0	6.9±0.2	0.88±0.0	39.2±0.9	0.23±0.0	38.5±0.9	10.0±0.2	44.9±0.9	6.1±0.1	25.8±0.5	22.4±0.5

Equation for calculation the theoretical HHV values (Eq. S1):

$$HHV \left(\frac{MJ}{kg} \right) = 0.3491 \cdot C \text{ (wt. \%)} + 1.1783 \cdot H \text{ (wt. \%)} + 0.1005 \cdot S \text{ (wt. \%)} - 0.1034 \cdot O \text{ (wt. \%)} - 0.0151 \cdot N \text{ (wt. \%)} - 0.0211 \cdot sh \text{ (wt. \%)} \quad (S1)$$