

Supplementary materials

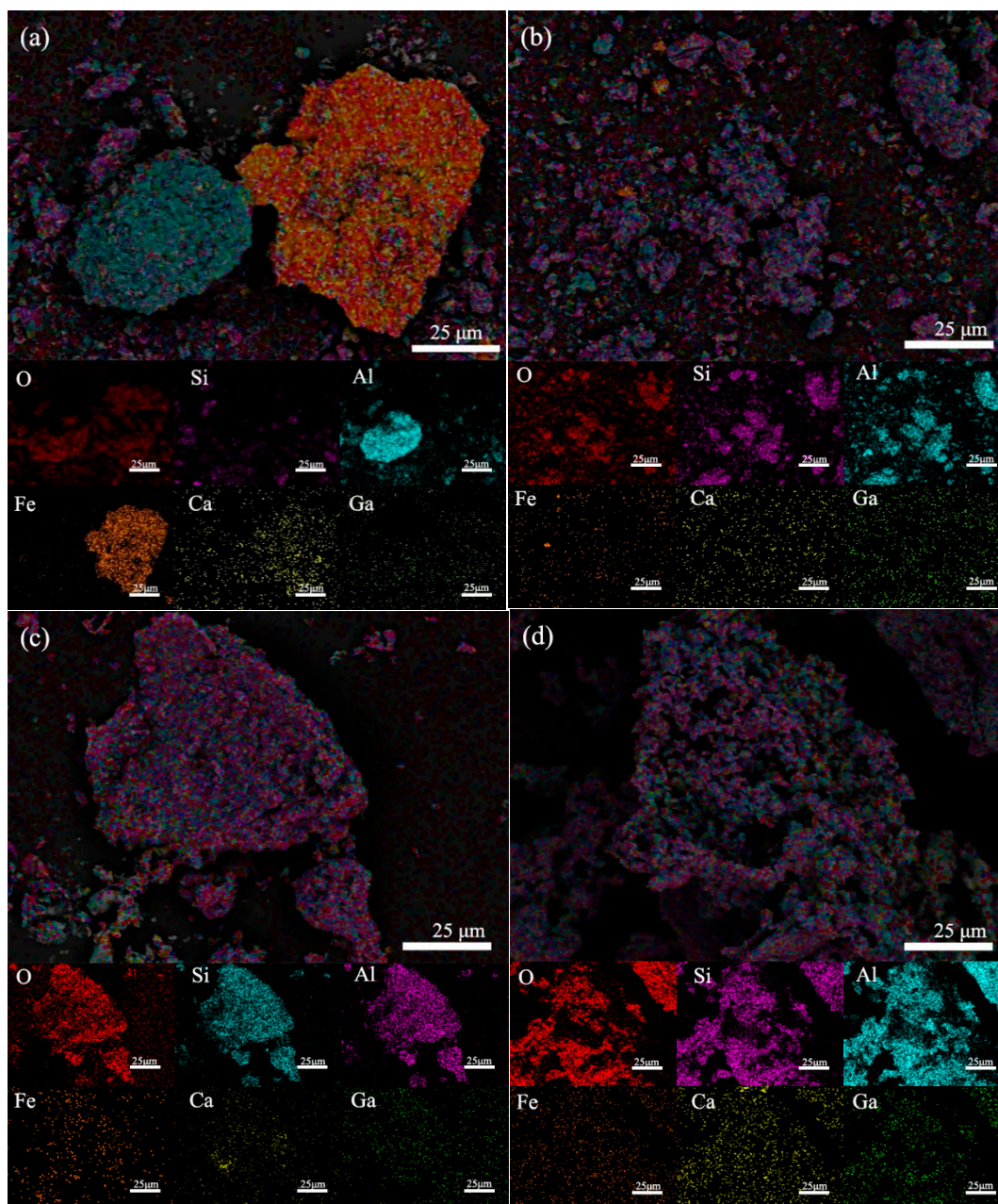


Figure S1. SEM images and elemental distribution maps of the ashes derived from the simulated combustion at 600 °C (a), 800 °C (b), 1000 °C (c) and 1200 °C (d).

Table S1. The concentration of Li and Ga in the combustion ashes, the leaching solutions and final residues of SCEP, determined by ICP-MS.

Sample	Critical metal	Conc. in ashes (µg/g)	Conc. in leaching solutions obtained from each step of SCEP (µg/L)					Conc. in residues of Step 5.2 (µg/kg)	R
			Step 1	Step 2	Step 3	Step 4	Step 5.1		
Fly ash	Li	382	1480	1232	936	4391	6524	161491	82.8%
	Ga	133	0.77	17	655	2310	1202	58831	79.1%
Bottom ash	Li	239	749	689	1919	1030	7671	62913	82.4%
	Ga	36	0.07	17	101	258	532	19592	78.0%
600 °C ash	Li	965	1408	700	3886	20146	3539	9546	45.4%
	Ga	99	2.3	11	205	2901	3429	17924	90.9%
800 °C ash	Li	568	1158	553	3806	13859	9317	46969	74.0%
	Ga	69	0.1	16	139	1623	1893	47117	104.7%
1000 °C ash	Li	882	789	462	1090	2711	13349	337436	56.0%
	Ga	81	0.1	5.6	29	217	2012	63417	95.2%
1200 °C ash	Li	1086	423	192	1302	848	23657	152992	36.3%
	Ga	82	0.1	4.3	16	153	901	70741	80.1%