

Supplemental Information

Fig. S1 shows an image of cement powder taken with an industrial microscope. It can be observed that there are many particles larger than 50 μm and irregularly shaped particles in the cement samples, which will not be completely ablated by the plasma and cause disturbance to the plasma discharge filament.

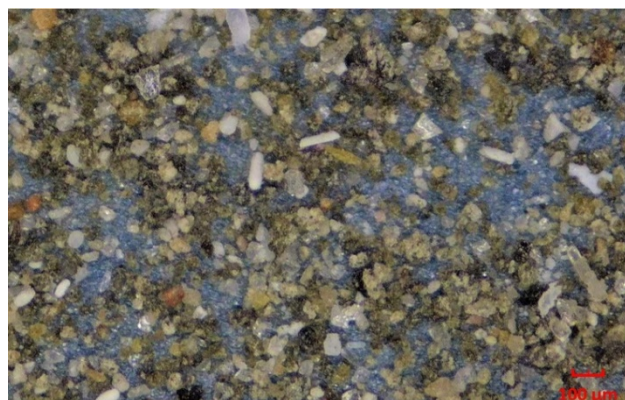


Fig. S1 Image of cement powder taken with an industrial microscope

Table S1 The considered oxide concentrations of certified cement samples (GSB 08-2985-2013)

Certified Cement Samples		SiO ₂	Al ₂ O ₃	Fe ₂ O ₃	CaO	MgO
C1	wt%	25.49	6.96	3.31	51.18	3.94
	Uncertainty	0.08	0.08	0.04	0.06	0.05
C2	wt%	24.10	6.93	3.20	53.59	3.70
	Uncertainty	0.13	0.03	0.06	0.11	0.07
C3	wt%	23.78	6.56	3.19	54.14	3.47
	Uncertainty	0.13	0.11	0.06	0.13	0.04
C4	wt%	23.30	6.33	3.05	55.50	3.28
	Uncertainty	0.08	0.07	0.05	0.10	0.03
C5	wt%	23.13	6.10	3.00	57.08	3.13
	Uncertainty	0.11	0.04	0.06	0.15	0.04
C6	wt%	22.80	5.82	2.91	58.14	2.93
	Uncertainty	0.13	0.08	0.04	0.09	0.04
C7	wt%	22.56	5.55	2.83	59.44	2.66
	Uncertainty	0.08	0.04	0.03	0.11	0.05
C8	wt%	22.27	5.32	2.74	60.63	2.47
	Uncertainty	0.08	0.05	0.04	0.12	0.04
C9	wt%	22.02	5.09	2.69	61.50	2.26
	Uncertainty	0.09	0.03	0.06	0.09	0.06
C10	wt%	21.81	4.78	2.58	62.65	2.07
	Uncertainty	0.18	0.06	0.03	0.06	0.06
C11	wt%	21.45	4.46	2.49	64.01	1.85
	Uncertainty	0.05	0.06	0.03	0.14	0.08

Table S1 shows the considered oxide concentrations of the certified cement samples.