Supporting information to:

Condensation Behavior of Heavy Metals during Oxy-fuel Coal Combustion: Deposition, Species Distribution, and Their Particle Characteristics

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The supporting Information contains: 1 Table and 1 Figure

Physical process	Physical property	Unit	Temperature	CO ₂	N_2	H ₂ O	Pb				Zn			
							O-H	A-H	0	А	О-Н	A-H	0	А
Thermodynamic	Density	Kg/m ³	800-600 °C	0.55	0.35	0.23	0.47	0.46	0.56	0.47	0.49	0.45	0.58	0.47
			600-300 °C	0.74	0.47	0.30	0.66	0.61	0.67	0.63	0.65	0.60	0.73	0.62
			300-100 °C	1.13	0.72	0.46	1.04	0.98	1.14	0.97	1.04	0.98	1.12	0.95
	Specific heat C _P	J/K	800-600 °C	53.88	32.48	40.92	2047	1199	1901	1250	1950	1384	1801	1181
			600-300 °C	49.82	30.93	37.81	1775	1195	1477	920	1777	1199	1519	948.9
			300-100 °C	43.59	29.55	35.00	1493	1067	1066	853	1494	1067	1307	853
Momentum transfer	Viscosity	Pa.s 10 ⁻⁵	800-600 °C	5.17	4.12	3.31	4.60	4.46	5.02	4.60	4.60	4.45	5.01	4.60
			600-300 °C	4.45	3.55	2.84	4.08	3.92	4.33	3.97	4.08	3.92	4.33	3.97
			300-100 °C	3.59	4.12	2.30	3.52	3.31	3.52	3.24	3.52	3.31	3.52	3.24
Heat transfer	Thermal conductivity	W/mK 10 ⁻²	800-600 °C	4.42	5.54	6.90	4.88	5.11	4.52	5.02	4.89	5.11	4.52	5.01
			600-300 °C	3.80	4.76	5.94	4.19	4.38	3.88	4.32	4.19	4.38	3.88	4.32
			300-100 °C	3.07	3.84	4.80	3.35	3.50	3.13	3.48	3.35	3.50	3.13	3.48

Table S1 Comparison between the selected physical properties of CO₂, N₂, H₂O, and four kinds of simulated flue gas systems at 1 atm



Figure S1. Crystal size distribution of the particles formed by the condensed Pb and Zn vapors shown in SEM images of Pb (a) in Figure S6 and Zn (b) in Figure S7 in OFFG, AFFG, OFFGWS, and AFFGWS.