

Table S1. Results of the *Powder Thermal Treatment* scheme

Sr	T	Dt	α (wt%)	α Ds (nm)	t_{in} (min)	HA (wt%)
-1	-1	-1	51.5	213	33 $\pm$ 4	20
1	-1	-1	37	203	64 $\pm$ 4	2
-1	1	-1	96.2	407	13 $\pm$ 2	44
1	1	-1	93.5	189	26 $\pm$ 3	23
-1	-1	1	64	231	22 $\pm$ 2	21
1	-1	1	34	235	60 $\pm$ 5	4
-1	1	1	100	711	11 $\pm$ 2	48
1	1	1	97.5	293	25 $\pm$ 3	33
0	0	0	87	480	19 $\pm$ 2	32
0	0	0	87.1	479	20 $\pm$ 2	32
0	0	0	87	480	19 $\pm$ 2	34
-1	0	0	90	451	14 $\pm$ 2	51
1	0	0	84	221	62 $\pm$ 6	5
0	-1	0	49	261	48 $\pm$ 7	4
0	1	0	94.6	383	20 $\pm$ 2	33
0	0	-1	88	444	34 $\pm$ 3	27
0	0	1	90.4	432	24 $\pm$ 2	30

Table S2. Results of the regression analysis of the *Powder Thermal Treatment* scheme

<i>Factor</i>	α		α Ds		t_{in}		HA	
	Coefficient	p-value	Coefficient	p-value	Coefficient	p-value	Coefficient	p-value
Constant	87.53		440.54		26.22		29.35	
Sr	-5.57	0.000	-87.20	0.002	14.40	0.001	-11.70	0.001
T	24.63	0.000	84.00	0.003	-13.20	0.002	13.10	0.001
Dt	1.97	0.068	44.60	0.052	-2.80	0.357	2.00	0.432
Sr $\cdot$ T	4.91	0.002	-78.75	0.007	-5.25	0.142	-0.12	0.964
Sr $\cdot$ Dt	-1.91	0.104	-23.25	0.312	1.00	0.762	0.87	0.754
T $\cdot$ Dt	-0.21	0.841	44.75	0.074	1.50	0.651	0.13	0.624
Sr ²	-0.91	0.623	-75.21	0.081	6.60	0.268	1.13	0.814
T ²	-16.11	0.000	-89.21	0.046	2.61	0.649	-8.37	0.114
Dt ²	1.29	0.489	26.79	0.491	-2.39	0.676	1.63	0.735
R^2	0.98		0.92		0.86		0.89	
R^2 -adj	0.97		0.82		0.74		0.75	

Table S3. Results of the *Powder Thermal Treatment* scheme

Sr	MT	MBD	D ₅₀ (μ m)	t _{in} (min)	t _{fin} (min)
-1	-1	-1	3	16 $\pm$ 2	24 $\pm$ 3
1	-1	-1	2.8	37 $\pm$ 4	66 $\pm$ 5
-1	1	-1	1.8	14 $\pm$ 3	23 $\pm$ 2
1	1	-1	1.6	26 $\pm$ 4	60 $\pm$ 7
-1	-1	1	4.6	22 $\pm$ 2	34 $\pm$ 4
1	-1	1	4.9	45 $\pm$ 3	74 $\pm$ 9
-1	1	1	2.7	19 $\pm$ 3	27 $\pm$ 3
1	1	1	2.8	42 $\pm$ 6	68 $\pm$ 8
0	0	0	3	25 $\pm$ 3	35 $\pm$ 3
0	0	0	2.8	25 $\pm$ 3	41 $\pm$ 4
0	0	0	2.9	24 $\pm$ 3	40 $\pm$ 2
-1	0	0	2.8	18 $\pm$ 2	32 $\pm$ 2
1	0	0	2.7	30 $\pm$ 3	65 $\pm$ 5
0	-1	0	3.2	21 $\pm$ 3	48 $\pm$ 3
0	1	0	2	20 $\pm$ 2	45 $\pm$ 6
0	0	-1	2.3	16 $\pm$ 2	41 $\pm$ 5
0	0	1	3.8	24 $\pm$ 3	55 $\pm$ 7

Table S4. Results of the regression analysis of the *Powder Planetary Milling* scheme

Factor	D ₅₀		t _{in}		t _{fin}	
	Coefficient	p-value	Coefficient	p-value	Coefficient	p-value
Constant	2.80		21.86		42.87	
Sr	-0.01	0.837	9.10	0.000	19.30	0.000
MT	-0.76	0.000	-2.00	0.126	-2.30	0.195
MBD	0.73	0.000	4.30	0.007	4.40	0.029
Sr · MT	-0.02	0.649	-1.12	0.412	-0.50	0.788
Sr · MBD	0.10	0.099	1.62	0.248	0.25	0.893
MT · MBD	-0.20	0.006	0.87	0.519	-0.75	0.689
Sr ²	0.02	0.852	4.25	0.098	2.47	0.452
MT ²	-0.13	0.188	0.75	0.747	0.47	0.883
MBD ²	0.32	0.010	0.25	0.915	1.97	0.545
R ²	0.98		0.92		0.95	
R ² -adj	0.97		0.83		0.90	

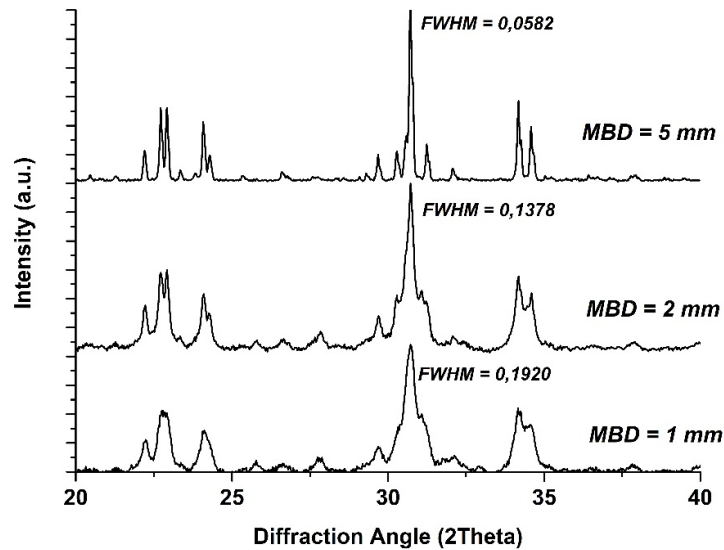


Figure S1. XRD patterns of Sr₂ powders prepared with different MBD (5mm, 2mm, 1mm), with respective FWHM of the highest peak (i.e.2 θ =30.71).

Table S5 – Results of the *Setting solution and mixing* scheme

SP	SA	LP	t _{in} (min)	HA (wt%)	η (Pa s)
-1	-1	-1	720	40	23.6
1	-1	-1	10 ± 2	88	36
-1	1	-1	720	45	25
1	1	-1	9 ± 2	88	119.8
-1	-1	1	1200	30	6.5
1	-1	1	16 ± 3	87	5.6
-1	1	1	1200	32	22.7
1	1	1	15 ± 2	88	6.6
0	0	0	28 ± 4	84	30.3
0	0	0	26 ± 5	84	30.1
0	0	0	28 ± 4	83	30.2
-1	0	0	1000	30	16.3
1	0	0	13 ± 4	88	57.6
0	-1	0	23 ± 3	87	6.4
0	1	0	18 ± 2	76	14.8
0	0	-1	19 ± 3	84	51.3
0	0	1	38 ± 3	86	7.1

Table S6. Results of the regression analysis of the *Setting solution and mixing* scheme

<i>Factor</i>	t _{in}		HA		η	
	Coefficient	p-value	Coefficient	p-value	Coefficient	p-value
Constant	30.62		82.74		26.96	
SP	-477.70	0.000	26.20	0.000	13.15	0.025
SA	-0.70	0.968	-0.30	0.826	11.08	0.049
LP	99.10	0.000	-2.20	0.138	-20.72	0.003
SP · SA	-0.25	0.990	-0.75	0.625	8.40	0.151
SP · LP	-118.50	0.000	2.75	0.103	-15.52	0.020
SA · LP	0.00	1.000	-0.25	0.869	-8.50	0.147
SP ²	473.41	0.000	-23.05	0.000	12.42	0.210
SA ²	-12.58	0.716	-0.55	0.833	-13.93	0.166
LP ²	-4.58	0.894	2.94	0.284	4.67	0.620
R ²	0.98		0.96		0.88	
R ² -adj	0.97		0.94		0.72	