

Electronic Supplementary Information

Residence time and stirring rate for each sample produced, linked to the phases compositions gained from TG analysis, and weight uptake observed; the Ca balance, expressed as the difference between the inbound and outbound gram of Ca, is also reported to validate the quantification performed.

	Residence time (sec)	Stirring rate (rpm)	Wt.% Na ₂ CO ₃ ·H ₂ O	Wt.% Ca(OH) ₂	Wt.% CaCO ₃	Wt.% Na ₂ CO ₃	Weight uptake (%)	ΔCa (g)
40rpm_30 sec	30	40	49.6	32.6	10.3	7.6	78.3	0.2
40rpm_300 sec	300	40	53.6	36.2	7.8	2.4	83.6	-0.2
40rpm_720 sec	720	40	59.5	35.0	3.3	2.3	90.9	0.2
40rpm_1200 sec	1200	40	60.8	34.9	2.5	1.8	92.3	0.2
300rpm_30 sec	30	300	18.0	25.9	30.5	25.5	50.5	0.2
300rpm_300 sec	300	300	23.6	33.3	12.8	30.3	75.0	0.2
300rpm_720 sec	720	300	55.8	32.4	10.5	1.3	78.0	0.1
300rpm_1200 sec	1200	300	58.0	32.7	7.8	1.5	82.2	0.2
500rpm_30 sec	30	500	18.9	24.0	35.0	22.1	45.1	0.3
500rpm_300 sec	300	500	27.2	29.8	19.9	23.1	64.0	0.2
500rpm_720 sec	720	500	54.4	31.1	12.6	1.9	74.2	0.1
500rpm_1200 sec	1200	500	56.7	31.6	10.5	1.1	77.5	0.2
800rpm_30 sec	30	800	3.0	22.2	42.2	32.6	38.4	0.2
800rpm_300 sec	300	800	12.1	29.8	23.8	34.3	59.9	0.1
800rpm_720 sec	720	800	49.6	30.2	15.4	4.8	69.8	0.2
800rpm_1200 sec	1200	800	56.9	32.2	9.6	1.3	79.1	0.2
2000rpm_30 sec	30	2000	11.9	17.6	50.4	20.0	29.0	0.3
2000rpm_300 sec	300	2000	10.2	23.7	36.3	29.7	43.9	0.2
2000rpm_720 sec	720	2000	9.2	26.0	29.8	35.1	51.1	0.2
2000rpm_1200 sec	1200	2000	7.1	27.2	27.0	38.6	54.7	0.2