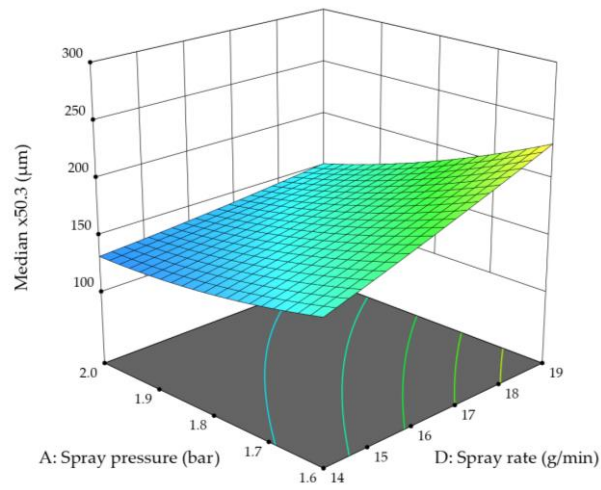


Table S1. Factor setting of the 30 batches performed in the CCD and their corresponding results in terms of sphericity, median ($x_{50.3}$) and COV ($x_{50.3}$).

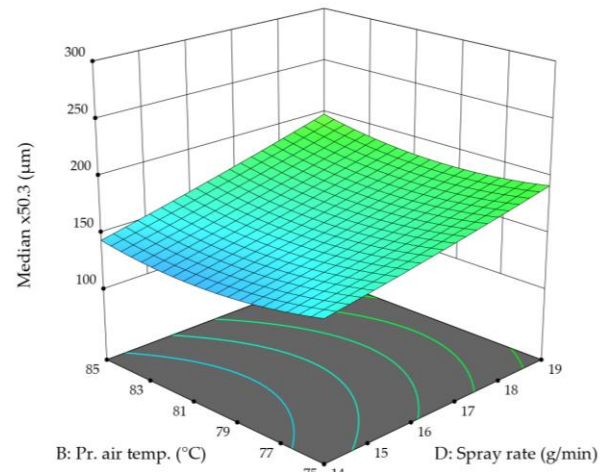
Batch	Spray pressure [bar]	Process air temperature [°C]	Rotor speed [rpm]	Spray rate [g/min]	Sphericity [-]	Median ($x_{50.3}$) [μm]	COV ($x_{50.3}$) [-]
1	1.8	80	650	16.5	0.7755	160.7	0.437
2	1.6	85	475	14	0.7845	144.9	0.427
3	1.8	80	650	16.5	0.7995	178.6	0.461
4	1.6	75	825	19	0.7825	257.1	0.52
5	1.6	85	475	19	0.7875	238.4	0.499
6	2.0	75	475	14	0.7835	145.2	0.44
7	1.6	85	825	19	0.7805	263.8	0.52
8	2.0	85	825	14	0.78	113.4	0.35
9	1.8	80	1000	16.5	0.7705	134.8	0.381
10	2.0	85	475	14	0.817	152.6	0.439
11	2.0	75	825	19	0.778	160.7	0.439
12	1.8	80	650	11.5	0.817	136	0.41
13	1.6	75	475	14	0.8	188.3	0.465
14	2.2	80	650	16.5	0.7775	130.1	0.418
15	1.8	80	650	16.5	0.783	158.8	0.444
16	1.6	75	825	14	0.7895	153.3	0.435
17	1.4	80	650	16.5	0.7725	237.3	0.501
18	2.0	85	825	19	0.803	170.7	0.452
19	2.0	75	825	14	0.799	132.7	0.408
20	1.8	80	300	16.5	0.7715	151	0.438
21	1.8	90	650	16.5	0.8155	203.9	0.476
22	1.8	80	650	16.5	0.775	149.9	0.436
23	2.0	75	475	19	0.792	177.4	0.456
24	1.8	80	650	21.5	0.7695	190.2	0.493
25	1.8	70	650	16.5	0.795	198.2	0.472
26	1.6	75	475	19	0.7725	218.2	0.493
27	2.0	85	475	19	0.777	155.2	0.44
28	1.8	80	650	16.5	0.7795	151.8	0.442
29	1.8	80	650	16.5	0.805	160	0.45
30	1.6	85	825	14	0.8095	158.6	0.415

Table S2. SFV parameters in the rotary fluidized bed agglomeration process.

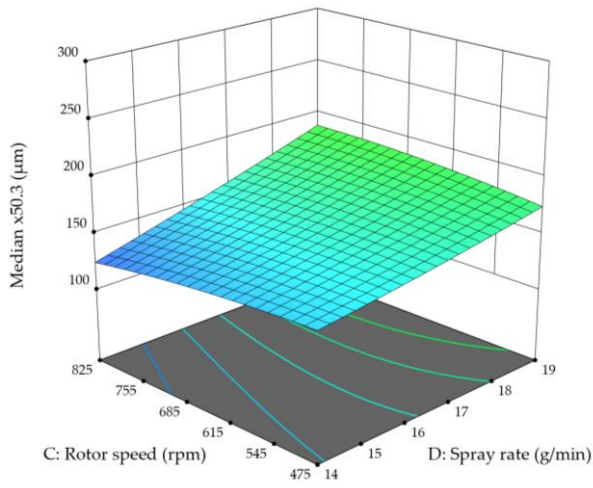
SFV parameter	Setting
Internal air flow [l/min]	15
External air flow [l/min]	5
Distance of probe to the wall [cm]	4
Disperser type [-]	D12
Angle of disperser [°]	35–45
Maximum loading measuring site 1 [%]	5
Maximum loading measuring site 2 [%]	10
Ring memory measuring point 1 [particles]	15000
Ring memory measuring point 2 [particles]	2500



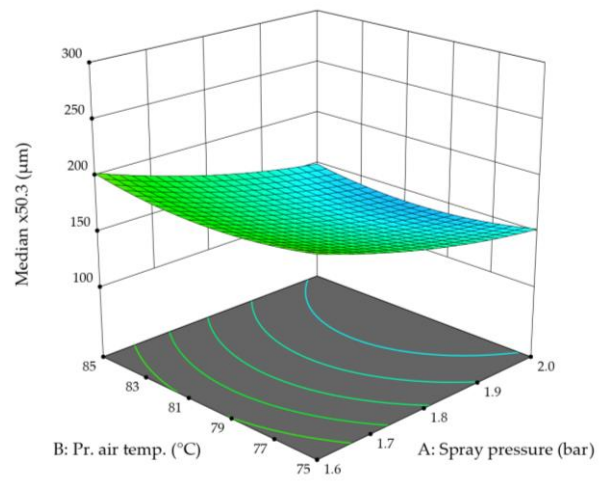
(a)



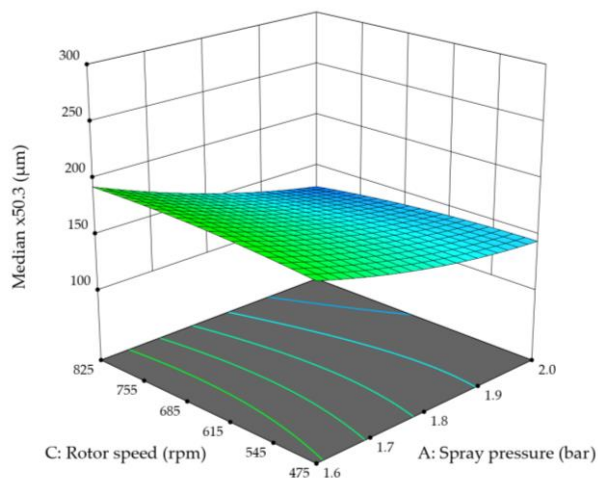
(b)



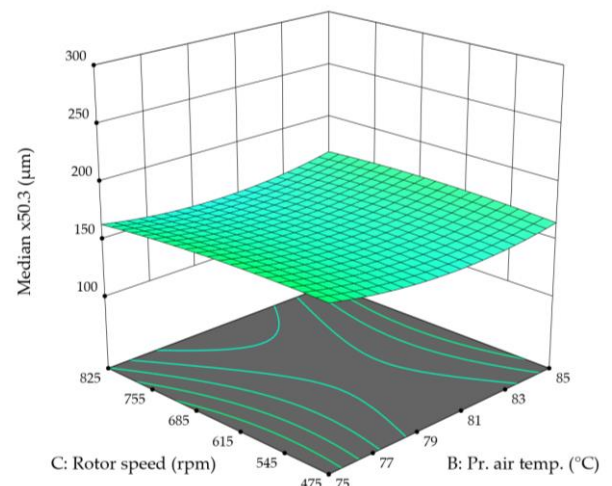
(c)



(d)

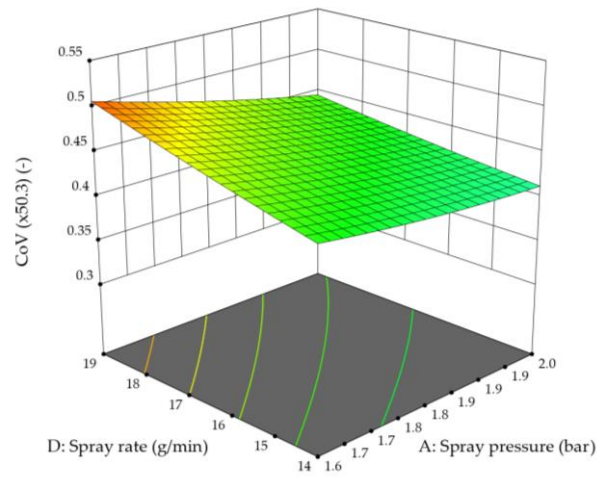


(e)

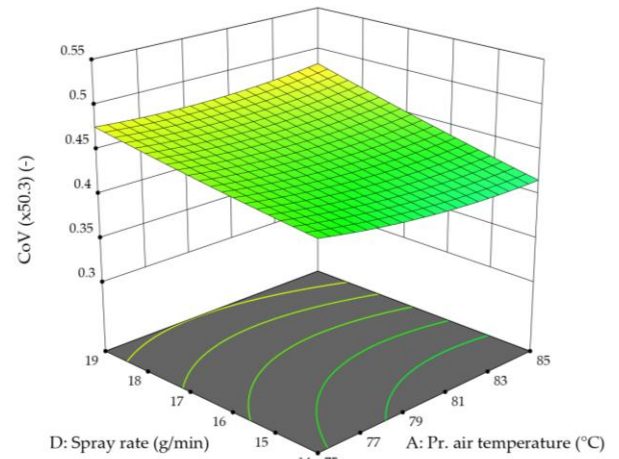


(f)

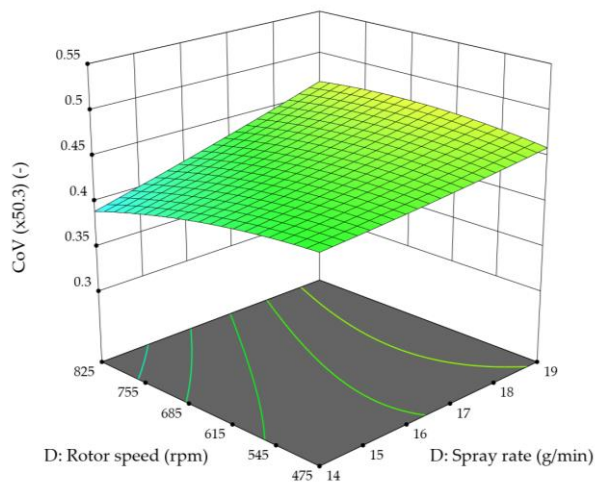
Figure S1: Response surface models for median ($x_{50.3}$) for different factor combinations: (a) spray pressure vs spray rate, (b) process air temperature vs. spray rate, (c) rotor speed vs. spray rate, (d) process air temperature vs. spray pressure, (e) rotor speed vs. spray pressure, (f) rotor speed vs process air temperature. All independent variables that are not included in the graphs are set to the central point.



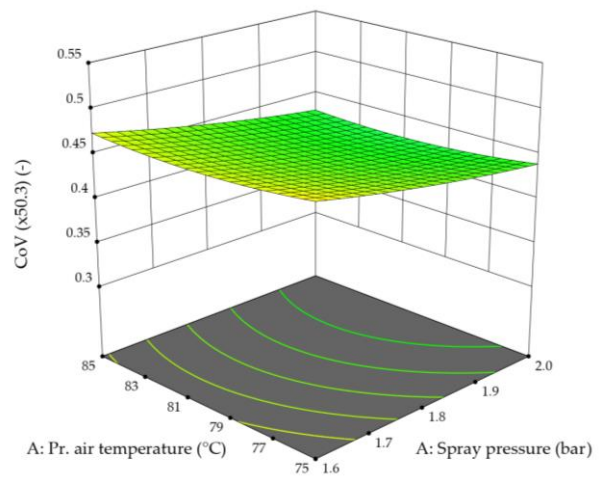
(a)



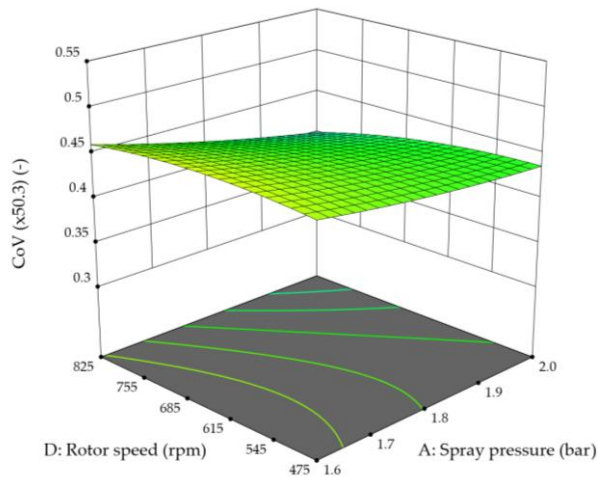
(b)



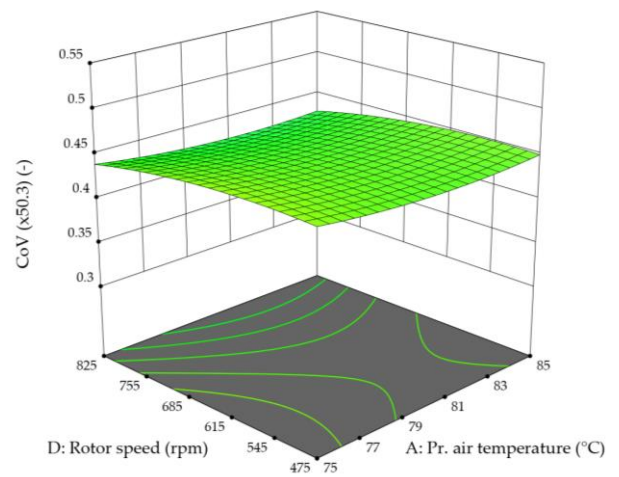
(c)



(d)



(e)



(f)

Figure S2: Response surface models for COV ($\times 50.3$) for different factor combinations: (a) spray pressure vs spray rate, (b) process air temperature vs. spray rate, (c) rotor speed vs. spray rate, (d) process air temperature vs. spray pressure, (e) rotor speed vs. spray pressure, (f) rotor speed vs process air temperature. All independent variables that are not included in the graphs are set to the central point.