

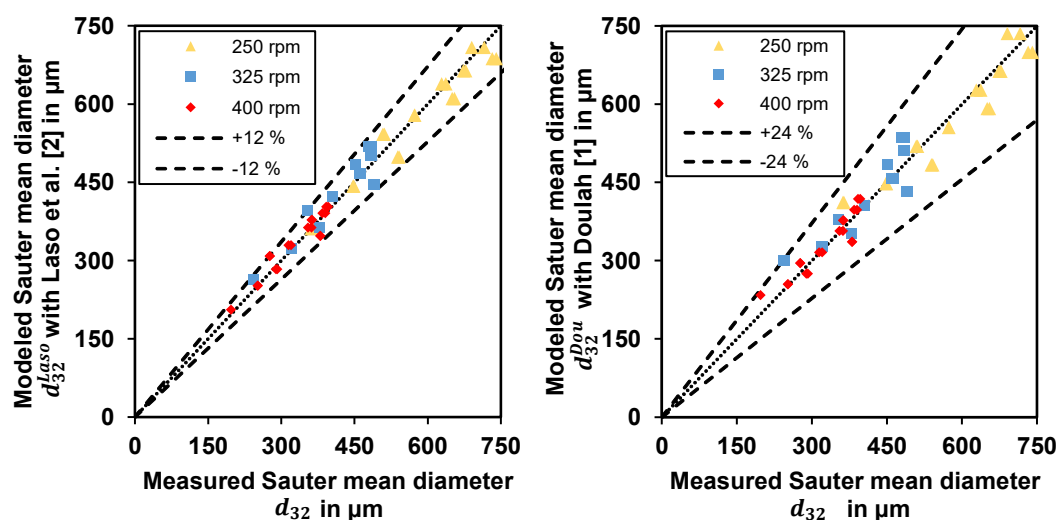
# Supplementary material

**Table S1.** Coefficients for the fitted models with the theoretical Weber exponent  $C_9 = -0.6$ .

Values for Eq. (8)	Coefficients				Confidence intervals		
	$C_4$	$C_5$	$C_9$	$R^2$	$C_4$	$C_5$	$C_9$
	0.1214	1.9120	-0.6	0.9472	0.1139 to 0.1288	1.605 to 2.2190	-
Values for Eq. (9)	$C_6$	$C_7$	$C_9$	$R^2$	$C_6$	$C_7$	$C_9$
	0.3203	0.2927	-0.6	0.9685	0.3093 to 0.3313	0.2675 to 0.3179	-

**Table S2.** Relative and absolute deviations for the fitted models with the theoretical Weber exponent  $C_9 = -0.6$ .

	Calculated errors			
	Maximum relative error	Mean relative error	Maximum absolute error	Mean absolute error
	$\Delta d_{32}^{max,\%}$ in %	$\Delta \bar{d}_{32}^{mean,\%}$ in %	$\Delta d_{32}^{max,\mu m}$ in $\mu m$	$\Delta \bar{d}_{32}^{mean,\mu m}$ in $\mu m$
Values for Eq. (8)	23.2	6.0	63	25
Values for Eq. (9)	12.0	4.4	53	18



**Figure S1.** Parity plot for  $C_9 = -0.6$  for: (a) model of Laso et al. [51] within 12 % error, (b) model of Doulah [50] within 24 % error (coefficients from Table S1).

**Table S3.** Sauter mean diameter  $d_{32}$  for  $N = 250$  rpm.

$\varphi$ in vol.-%	Experiment 1		Experiment 2	
	$d_{32}$ in $\mu\text{m}$	Number of particles $Z$	$d_{32}$ in $\mu\text{m}$	Number of particles $Z$
5	363.6	112712	361.5	112492
10	448.7	144801	447.3	146289
15	541.3	121473	538.4	123703
20	511.1	76300	508.3	90942
25	573.4	113690	573.0	114784
30	654.7	75093	650.2	77578
35	637.3	26577	628.3	32075
40	677.9	22505	673.6	24766
45	732.2	26615	740.5	25067
50	690.6	64080	715.9	41245

**Table S4.** Sauter mean diameter  $d_{32}$  for  $N = 325$  rpm.

$\varphi$ in vol.-%	Experiment 1		Experiment 2	
	$d_{32}$ in $\mu\text{m}$	Number of particles $Z$	$d_{32}$ in $\mu\text{m}$	Number of particles $Z$
5	244.2	252350	244.0	252937
10	320.8	186810	320.2	187141
15	378.8	169519	378.7	168976
20	353.1	136499	354.0	136510
25	405.3	156998	404.5	169900
30	490.4	94751	489.3	95239
35	462.3	45964	459.7	44965
40	451.8	121131	451.7	115233
45	485.0	124036	482.5	120877
50	485.9	77975	478.2	98466

**Table S5.** Sauter mean diameter  $d_{32}$  for  $N = 400$  rpm.

$\varphi$ in vol.-%	Experiment 1		Experiment 2	
	$d_{32}$ in $\mu\text{m}$	Number of particles $Z$	$d_{32}$ in $\mu\text{m}$	Number of particles $Z$
5	197.0	351343	-	-
10	252.1	216832	251.7	214930
15	291.6	166507	288.9	185070
20	276.4	211934	276.4	237206
25	319.9	79368	314.2	108063
30	380.3	85099	379.4	86026
35	354.5	27303	361.9	106587
40	363.3	79995	361.8	122358
45	389.8	90932	384.0	118657
50	396.1	15822	391.8	44630

**Table S6.** Number distribution  $q_0$  for  $\varphi = 5$  vol.-% (Experiment 1).

$\bar{d}_i$ in $\mu\text{m}$	$q_0$ in $\mu\text{m}^{-1}$ for $N = 250$ rpm	$q_0$ in $\mu\text{m}^{-1}$ for $N = 325$ rpm	$q_0$ in $\mu\text{m}^{-1}$ for $N = 400$ rpm
10	0.000000	0.000000	0.000000
30	0.001937	0.002868	0.004214
50	0.005759	0.006447	0.008090
70	0.004830	0.004745	0.006167
90	0.003779	0.004012	0.005347
110	0.003041	0.003873	0.004896
130	0.002613	0.003831	0.004360
150	0.002419	0.003660	0.003829
170	0.002283	0.003539	0.003282
190	0.002166	0.003204	0.002703
210	0.002083	0.002868	0.002163
230	0.002037	0.002490	0.001667
250	0.001932	0.002134	0.001261
270	0.001806	0.001723	0.000893
290	0.001746	0.001409	0.000612
310	0.001603	0.001108	0.000409
330	0.001462	0.000799	0.000107
350	0.001331	0.000593	0.000000
370	0.001151	0.000426	0.000000
390	0.001053	0.000271	0.000000
410	0.000960	0.000000	0.000000
430	0.000790	0.000000	0.000000
450	0.000692	0.000000	0.000000
470	0.000572	0.000000	0.000000
490	0.000486	0.000000	0.000000
510	0.000412	0.000000	0.000000
530	0.000334	0.000000	0.000000
550	0.000259	0.000000	0.000000
570	0.000208	0.000000	0.000000
590	0.000163	0.000000	0.000000
610	0.000092	0.000000	0.000000
630	0.000000	0.000000	0.000000

**Table S7.** Number distribution  $q_0$  for  $\varphi = 5$  vol.-% (Experiment 2).

$\bar{d}_i$ in $\mu\text{m}$	$q_0$ in $\mu\text{m}^{-1}$ for $N = 250$ rpm	$q_0$ in $\mu\text{m}^{-1}$ for $N = 325$ rpm
10	0.000000	0.000000
30	0.001993	0.002898
50	0.005897	0.006462
70	0.004878	0.004816
90	0.003740	0.004007
110	0.003039	0.003872
130	0.002569	0.003779
150	0.002447	0.003731
170	0.002227	0.003513
190	0.002191	0.003184
210	0.002101	0.002892
230	0.002006	0.002433
250	0.001938	0.002105
270	0.001865	0.001721
290	0.001754	0.001410
310	0.001593	0.001080
330	0.001436	0.000831
350	0.001337	0.000590
370	0.001150	0.000408
390	0.001074	0.000267
410	0.000925	0.000000
430	0.000766	0.000000
450	0.000671	0.000000
470	0.000575	0.000000
490	0.000464	0.000000
510	0.000363	0.000000
530	0.000294	0.000000
550	0.000236	0.000000
570	0.000207	0.000000
590	0.000150	0.000000
610	0.000113	0.000000
630	0.000000	0.000000

**Table S8.** Number distribution  $q_0$  for  $\varphi = 10$  vol.-% (Experiment 1).

$\bar{d}_i$ in $\mu\text{m}$	$q_0$ in $\mu\text{m}^{-1}$ for $N = 250$ rpm	$q_0$ in $\mu\text{m}^{-1}$ for $N = 325$ rpm	$q_0$ in $\mu\text{m}^{-1}$ for $N = 400$ rpm
10	0.000000	0.000000	0.000000
30	0.000372	0.000793	0.000924
50	0.001791	0.001903	0.002096
70	0.001975	0.001780	0.002166
90	0.001781	0.001663	0.002469
110	0.001695	0.001872	0.003046
130	0.001695	0.002271	0.003839
150	0.001758	0.002747	0.004504
170	0.001859	0.003229	0.004960
190	0.002027	0.003569	0.004953
210	0.002118	0.003759	0.004579
230	0.002143	0.003585	0.004027
250	0.002232	0.003563	0.003406
270	0.002139	0.003239	0.002713
290	0.002281	0.002988	0.002153
310	0.002185	0.002614	0.001570
330	0.002164	0.002302	0.001123
350	0.002061	0.001970	0.000737
370	0.002050	0.001650	0.000484
390	0.001895	0.001296	0.000253
410	0.001809	0.001042	0.000000
430	0.001711	0.000814	0.000000
450	0.001519	0.000587	0.000000
470	0.001404	0.000425	0.000000
490	0.001258	0.000286	0.000000
510	0.001116	0.000054	0.000000
530	0.000995	0.000000	0.000000
550	0.000781	0.000000	0.000000
570	0.000686	0.000000	0.000000
590	0.000615	0.000000	0.000000
610	0.000498	0.000000	0.000000
630	0.000396	0.000000	0.000000
650	0.000325	0.000000	0.000000
670	0.000262	0.000000	0.000000
690	0.000205	0.000000	0.000000
710	0.000157	0.000000	0.000000
730	0.000039	0.000000	0.000000
750	0.000000	0.000000	0.000000

**Table S9.** Number distribution  $q_0$  for  $\varphi = 10$  vol.-% (Experiment 2).

$\bar{d}_i$ in $\mu\text{m}$	$q_0$ in $\mu\text{m}^{-1}$ for $N = 250$ rpm	$q_0$ in $\mu\text{m}^{-1}$ for $N = 325$ rpm	$q_0$ in $\mu\text{m}^{-1}$ for $N = 400$ rpm
10	0.000000	0.000000	0.000000
30	0.000403	0.000760	0.000944
50	0.001813	0.001880	0.002112
70	0.001985	0.001744	0.002168
90	0.001840	0.001632	0.002469
110	0.001736	0.001862	0.003092
130	0.001704	0.002263	0.003855
150	0.001784	0.002762	0.004553
170	0.001927	0.003274	0.004977
190	0.002012	0.003635	0.004886
210	0.002084	0.003777	0.004564
230	0.002153	0.003686	0.004017
250	0.002218	0.003532	0.003411
270	0.002193	0.003225	0.002705
290	0.002254	0.002979	0.002083
310	0.002128	0.002593	0.001567
330	0.002159	0.002325	0.001124
350	0.002089	0.001948	0.000776
370	0.001989	0.001641	0.000477
390	0.001850	0.001332	0.000220
410	0.001764	0.001041	0.000000
430	0.001701	0.000796	0.000000
450	0.001509	0.000572	0.000000
470	0.001396	0.000405	0.000000
490	0.001211	0.000279	0.000000
510	0.001113	0.000056	0.000000
530	0.001000	0.000000	0.000000
550	0.000841	0.000000	0.000000
570	0.000717	0.000000	0.000000
590	0.000614	0.000000	0.000000
610	0.000502	0.000000	0.000000
630	0.000401	0.000000	0.000000
650	0.000338	0.000000	0.000000
670	0.000256	0.000000	0.000000
690	0.000194	0.000000	0.000000
710	0.000121	0.000000	0.000000
730	0.000000	0.000000	0.000000

**Table S10.** Number distribution  $q_0$  for  $\varphi = 15$  vol.-% (Experiment 1).

$\bar{d}_i$ in $\mu\text{m}$	$q_0$ in $\mu\text{m}^{-1}$ for $N = 250$ rpm	$q_0$ in $\mu\text{m}^{-1}$ for $N = 325$ rpm	$q_0$ in $\mu\text{m}^{-1}$ for $N = 400$ rpm
10	0.000000	0.000000	0.000000
30	0.000593	0.000875	0.001297
50	0.002192	0.002082	0.002430
70	0.001990	0.001630	0.001989
90	0.001772	0.001442	0.001912
110	0.001641	0.001502	0.002242
130	0.001532	0.001715	0.002722
150	0.001597	0.002007	0.003357
170	0.001615	0.002390	0.003846
190	0.001631	0.002662	0.004023
210	0.001628	0.002873	0.004065
230	0.001639	0.002897	0.003792
250	0.001640	0.002933	0.003435
270	0.001678	0.002809	0.003129
290	0.001690	0.002738	0.002712
310	0.001652	0.002661	0.002301
330	0.001629	0.002458	0.001889
350	0.001602	0.002245	0.001545
370	0.001615	0.002056	0.001175
390	0.001598	0.001833	0.000859
410	0.001581	0.001658	0.000601
430	0.001507	0.001434	0.000411
450	0.001506	0.001233	0.000267
470	0.001418	0.000988	0.000003
490	0.001345	0.000857	0.000000
510	0.001257	0.000637	0.000000
530	0.001229	0.000498	0.000000
550	0.001149	0.000384	0.000000
570	0.001024	0.000302	0.000000
590	0.000997	0.000201	0.000000
610	0.000916	0.000000	0.000000
630	0.000842	0.000000	0.000000
650	0.000713	0.000000	0.000000
670	0.000631	0.000000	0.000000
690	0.000571	0.000000	0.000000
710	0.000486	0.000000	0.000000
730	0.000400	0.000000	0.000000
750	0.000358	0.000000	0.000000
770	0.000290	0.000000	0.000000
790	0.000251	0.000000	0.000000
810	0.000207	0.000000	0.000000
830	0.000167	0.000000	0.000000
850	0.000140	0.000000	0.000000
870	0.000084	0.000000	0.000000
890	0.000000	0.000000	0.000000



**Table S11.** Number distribution  $q_0$  for  $\varphi = 15$  vol.-% (Experiment 2).

$\bar{d}_i$ in $\mu\text{m}$	$q_0$ in $\mu\text{m}^{-1}$ for $N = 250$ rpm	$q_0$ in $\mu\text{m}^{-1}$ for $N = 325$ rpm	$q_0$ in $\mu\text{m}^{-1}$ for $N = 400$ rpm
10	0.000000	0.000000	0.000000
30	0.000599	0.000889	0.001197
50	0.002145	0.002078	0.002383
70	0.002097	0.001669	0.001935
90	0.001814	0.001408	0.001961
110	0.001707	0.001482	0.002315
130	0.001565	0.001665	0.002830
150	0.001607	0.002049	0.003404
170	0.001606	0.002357	0.003895
190	0.001689	0.002647	0.004165
210	0.001664	0.002837	0.004113
230	0.001713	0.002941	0.003833
250	0.001703	0.002909	0.003504
270	0.001637	0.002861	0.003098
290	0.001683	0.002765	0.002683
310	0.001638	0.002602	0.002228
330	0.001644	0.002463	0.001846
350	0.001621	0.002257	0.001481
370	0.001565	0.002108	0.001124
390	0.001572	0.001871	0.000838
410	0.001564	0.001611	0.000587
430	0.001502	0.001436	0.000382
450	0.001477	0.001198	0.000198
470	0.001373	0.001043	0.000000
490	0.001362	0.000827	0.000000
510	0.001286	0.000652	0.000000
530	0.001177	0.000510	0.000000
550	0.001137	0.000365	0.000000
570	0.001077	0.000300	0.000000
590	0.000951	0.000201	0.000000
610	0.000888	0.000000	0.000000
630	0.000785	0.000000	0.000000
650	0.000709	0.000000	0.000000
670	0.000643	0.000000	0.000000
690	0.000524	0.000000	0.000000
710	0.000447	0.000000	0.000000
730	0.000410	0.000000	0.000000
750	0.000340	0.000000	0.000000
770	0.000275	0.000000	0.000000
790	0.000242	0.000000	0.000000
810	0.000188	0.000000	0.000000
830	0.000162	0.000000	0.000000
850	0.000126	0.000000	0.000000
870	0.000084	0.000000	0.000000
890	0.000000	0.000000	0.000000

**Table S12.** Number distribution  $q_0$  for  $\varphi = 20$  vol.-% (Experiment 1).

$\bar{d}_i$ in $\mu\text{m}$	$q_0$ in $\mu\text{m}^{-1}$ for $N = 250$ rpm	$q_0$ in $\mu\text{m}^{-1}$ for $N = 325$ rpm	$q_0$ in $\mu\text{m}^{-1}$ for $N = 400$ rpm
10	0.000000	0.000000	0.000000
30	0.000702	0.000621	0.000669
50	0.001290	0.001189	0.001319
70	0.001007	0.000816	0.001058
90	0.000855	0.000713	0.001111
110	0.000763	0.000774	0.001448
130	0.000734	0.001001	0.002076
150	0.000755	0.001331	0.002939
170	0.000890	0.001895	0.003906
190	0.001048	0.002503	0.004759
210	0.001316	0.003097	0.005164
230	0.001448	0.003477	0.005267
250	0.001769	0.003876	0.004969
270	0.001931	0.003919	0.004206
290	0.002183	0.003989	0.003514
310	0.002219	0.003651	0.002639
330	0.002404	0.003469	0.001948
350	0.002402	0.003003	0.001339
370	0.002309	0.002528	0.000865
390	0.002307	0.002114	0.000553
410	0.002227	0.001697	0.000250
430	0.002105	0.001364	0.000000
450	0.002011	0.001008	0.000000
470	0.001963	0.000734	0.000000
490	0.001801	0.000531	0.000000
510	0.001630	0.000375	0.000000
530	0.001510	0.000263	0.000000
550	0.001301	0.000060	0.000000
570	0.001201	0.000000	0.000000
590	0.001066	0.000000	0.000000
610	0.000917	0.000000	0.000000
630	0.000805	0.000000	0.000000
650	0.000663	0.000000	0.000000
670	0.000540	0.000000	0.000000
690	0.000471	0.000000	0.000000
710	0.000376	0.000000	0.000000
730	0.000310	0.000000	0.000000
750	0.000231	0.000000	0.000000
770	0.000186	0.000000	0.000000
790	0.000140	0.000000	0.000000
810	0.000109	0.000000	0.000000
830	0.000100	0.000000	0.000000
850	0.000003	0.000000	0.000000
870	0.000000	0.000000	0.000000

**Table S13.** Number distribution  $q_0$  for  $\varphi = 20$  vol.-% (Experiment 2).

$\bar{d}_i$ in $\mu\text{m}$	$q_0$ in $\mu\text{m}^{-1}$ for $N = 250$ rpm	$q_0$ in $\mu\text{m}^{-1}$ for $N = 325$ rpm	$q_0$ in $\mu\text{m}^{-1}$ for $N = 400$ rpm
10	0.000000	0.000000	0.000000
30	0.000551	0.000644	0.000492
50	0.001174	0.001135	0.001050
70	0.000903	0.000842	0.000929
90	0.000711	0.000749	0.001022
110	0.000677	0.000766	0.001357
130	0.000682	0.000959	0.001957
150	0.000756	0.001373	0.002949
170	0.000875	0.001874	0.003952
190	0.001053	0.002458	0.004868
210	0.001316	0.003087	0.005347
230	0.001494	0.003511	0.005402
250	0.001761	0.003891	0.005129
270	0.002010	0.003944	0.004377
290	0.002161	0.003843	0.003571
310	0.002275	0.003678	0.002648
330	0.002399	0.003369	0.001923
350	0.002396	0.002961	0.001356
370	0.002427	0.002597	0.000877
390	0.002408	0.002122	0.000529
410	0.002311	0.001759	0.000263
430	0.002159	0.001395	0.000000
450	0.002111	0.001031	0.000000
470	0.001949	0.000759	0.000000
490	0.001819	0.000556	0.000000
510	0.001663	0.000382	0.000000
530	0.001550	0.000281	0.000000
550	0.001361	0.000036	0.000000
570	0.001182	0.000000	0.000000
590	0.001060	0.000000	0.000000
610	0.000930	0.000000	0.000000
630	0.000795	0.000000	0.000000
650	0.000636	0.000000	0.000000
670	0.000580	0.000000	0.000000
690	0.000473	0.000000	0.000000
710	0.000402	0.000000	0.000000
730	0.000312	0.000000	0.000000
750	0.000252	0.000000	0.000000
770	0.000186	0.000000	0.000000
790	0.000135	0.000000	0.000000
810	0.000103	0.000000	0.000000
830	0.000000	0.000000	0.000000

**Table S14.** Number distribution  $q_0$  for  $\varphi = 25$  vol.-% (Experiment 1).

$\bar{d}_i$ in $\mu\text{m}$	$q_0$ in $\mu\text{m}^{-1}$ for $N = 250$ rpm	$q_0$ in $\mu\text{m}^{-1}$ for $N = 325$ rpm	$q_0$ in $\mu\text{m}^{-1}$ for $N = 400$ rpm
10	0.000000	0.000000	0.000000
30	0.000058	0.000100	0.000805
50	0.000589	0.000277	0.001577
70	0.000960	0.000453	0.001474
90	0.000899	0.000537	0.001527
110	0.000832	0.000634	0.001611
130	0.000773	0.000858	0.001960
150	0.000869	0.001161	0.002289
170	0.000946	0.001561	0.002796
190	0.001048	0.002069	0.003184
210	0.001146	0.002478	0.003563
230	0.001291	0.002808	0.003695
250	0.001476	0.003203	0.003739
270	0.001575	0.003387	0.003661
290	0.001762	0.003448	0.003409
310	0.001812	0.003414	0.003203
330	0.001912	0.003349	0.002868
350	0.001980	0.003095	0.002390
370	0.001961	0.002892	0.001959
390	0.002037	0.002549	0.001488
410	0.001958	0.002231	0.001120
430	0.001961	0.001991	0.000764
450	0.001947	0.001672	0.000523
470	0.001833	0.001395	0.000323
490	0.001771	0.001075	0.000072
510	0.001720	0.000862	0.000000
530	0.001634	0.000675	0.000000
550	0.001619	0.000508	0.000000
570	0.001422	0.000392	0.000000
590	0.001347	0.000283	0.000000
610	0.001221	0.000198	0.000000
630	0.001147	0.000151	0.000000
650	0.000985	0.000116	0.000000
670	0.000897	0.000081	0.000000
690	0.000781	0.000063	0.000000
710	0.000668	0.000037	0.000000
730	0.000601	0.000000	0.000000
750	0.000508	0.000000	0.000000
770	0.000410	0.000000	0.000000
790	0.000387	0.000000	0.000000
810	0.000292	0.000000	0.000000
830	0.000234	0.000000	0.000000
850	0.000208	0.000000	0.000000
870	0.000173	0.000000	0.000000
890	0.000132	0.000000	0.000000
910	0.000120	0.000000	0.000000
930	0.000095	0.000000	0.000000
950	0.000004	0.000000	0.000000

---

$\bar{d}_i$ in $\mu\text{m}$	$q_0$ in $\mu\text{m}^{-1}$ for $N = 250$ rpm	$q_0$ in $\mu\text{m}^{-1}$ for $N = 325$ rpm	$q_0$ in $\mu\text{m}^{-1}$ for $N = 400$ rpm
970	0.000000	0.000000	0.000000

---

**Table S15.** Number distribution  $q_0$  for  $\varphi = 25$  vol.-% (Experiment 2).

$\bar{d}_i$ in $\mu\text{m}$	$q_0$ in $\mu\text{m}^{-1}$ for $N = 250$ rpm	$q_0$ in $\mu\text{m}^{-1}$ for $N = 325$ rpm	$q_0$ in $\mu\text{m}^{-1}$ for $N = 400$ rpm
10	0.000000	0.000000	0.000000
30	0.000135	0.000100	0.000601
50	0.000967	0.000280	0.001290
70	0.001106	0.000499	0.001383
90	0.000920	0.000578	0.001599
110	0.000822	0.000662	0.001848
130	0.000753	0.000840	0.002002
150	0.000815	0.001169	0.002592
170	0.000866	0.001529	0.003044
190	0.000965	0.002017	0.003371
210	0.001114	0.002441	0.003618
230	0.001256	0.002788	0.003841
250	0.001360	0.003171	0.003879
270	0.001522	0.003253	0.003727
290	0.001600	0.003463	0.003494
310	0.001714	0.003361	0.003129
330	0.001824	0.003315	0.002716
350	0.001843	0.003130	0.002286
370	0.001933	0.002903	0.001773
390	0.001967	0.002593	0.001376
410	0.001970	0.002332	0.000998
430	0.001997	0.002032	0.000685
450	0.001927	0.001720	0.000499
470	0.001883	0.001391	0.000250
490	0.001826	0.001117	0.000000
510	0.001739	0.000862	0.000000
530	0.001686	0.000697	0.000000
550	0.001584	0.000511	0.000000
570	0.001494	0.000392	0.000000
590	0.001400	0.000278	0.000000
610	0.001253	0.000201	0.000000
630	0.001179	0.000144	0.000000
650	0.001035	0.000110	0.000000
670	0.000941	0.000075	0.000000
690	0.000819	0.000048	0.000000
710	0.000740	0.000000	0.000000
730	0.000619	0.000000	0.000000
750	0.000489	0.000000	0.000000
770	0.000435	0.000000	0.000000
790	0.000341	0.000000	0.000000
810	0.000301	0.000000	0.000000
830	0.000247	0.000000	0.000000
850	0.000201	0.000000	0.000000
870	0.000162	0.000000	0.000000
890	0.000131	0.000000	0.000000
910	0.000107	0.000000	0.000000
930	0.000010	0.000000	0.000000
950	0.000000	0.000000	0.000000

**Table S16.** Number distribution  $q_0$  for  $\varphi = 30$  vol.-% (Experiment 1).

$\bar{d}_i$ in $\mu\text{m}$	$q_0$ in $\mu\text{m}^{-1}$ for $N = 250$ rpm	$q_0$ in $\mu\text{m}^{-1}$ for $N = 325$ rpm	$q_0$ in $\mu\text{m}^{-1}$ for $N = 400$ rpm
10	0.000000	0.000000	0.000000
30	0.000069	0.000269	0.000514
50	0.000382	0.000579	0.001126
70	0.000637	0.000783	0.001122
90	0.000832	0.000840	0.001247
110	0.000870	0.000865	0.001311
130	0.000833	0.000932	0.001489
150	0.000868	0.001075	0.001766
170	0.000837	0.001213	0.002024
190	0.000898	0.001326	0.002246
210	0.000856	0.001488	0.002502
230	0.000961	0.001577	0.002714
250	0.000987	0.001796	0.002826
270	0.001021	0.001840	0.002887
290	0.001118	0.001989	0.003027
310	0.001145	0.002099	0.002944
330	0.001250	0.002214	0.003021
350	0.001248	0.002245	0.002833
370	0.001406	0.002362	0.002656
390	0.001396	0.002259	0.002434
410	0.001458	0.002326	0.002140
430	0.001501	0.002245	0.001754
450	0.001588	0.002203	0.001525
470	0.001620	0.002114	0.001202
490	0.001604	0.002001	0.000944
510	0.001685	0.001854	0.000711
530	0.001654	0.001761	0.000492
550	0.001735	0.001511	0.000351
570	0.001696	0.001434	0.000193
590	0.001713	0.001161	0.000000
610	0.001659	0.000938	0.000000
630	0.001597	0.000803	0.000000
650	0.001478	0.000636	0.000000
670	0.001410	0.000478	0.000000
690	0.001312	0.000364	0.000000
710	0.001188	0.000282	0.000000
730	0.001122	0.000139	0.000000
750	0.000980	0.000000	0.000000
770	0.000880	0.000000	0.000000
790	0.000795	0.000000	0.000000
810	0.000678	0.000000	0.000000
830	0.000621	0.000000	0.000000
850	0.000499	0.000000	0.000000
870	0.000424	0.000000	0.000000
890	0.000368	0.000000	0.000000
910	0.000302	0.000000	0.000000
930	0.000246	0.000000	0.000000
950	0.000220	0.000000	0.000000

---

$\bar{d}_i$ in $\mu\text{m}$	$q_0$ in $\mu\text{m}^{-1}$ for $N = 250$ rpm	$q_0$ in $\mu\text{m}^{-1}$ for $N = 325$ rpm	$q_0$ in $\mu\text{m}^{-1}$ for $N = 400$ rpm
970	0.000169	0.000000	0.000000
990	0.000129	0.000000	0.000000
1010	0.000059	0.000000	0.000000
1030	0.000000	0.000000	0.000000

---



**Table S17.** Number distribution  $q_0$  for  $\varphi = 30$  vol.-% (Experiment 2).

$\bar{d}_i$ in $\mu\text{m}$	$q_0$ in $\mu\text{m}^{-1}$ for $N = 250$ rpm	$q_0$ in $\mu\text{m}^{-1}$ for $N = 325$ rpm	$q_0$ in $\mu\text{m}^{-1}$ for $N = 400$ rpm
10	0.000000	0.000000	0.000000
30	0.000182	0.000246	0.000488
50	0.000664	0.000611	0.001093
70	0.000909	0.000723	0.001135
90	0.000975	0.000826	0.001161
110	0.000989	0.000880	0.001322
130	0.000891	0.000932	0.001543
150	0.000976	0.001060	0.001781
170	0.000915	0.001188	0.002070
190	0.000904	0.001331	0.002330
210	0.000958	0.001443	0.002490
230	0.000912	0.001625	0.002677
250	0.000999	0.001765	0.002861
270	0.001063	0.001896	0.002954
290	0.001127	0.002085	0.002935
310	0.001156	0.002134	0.002974
330	0.001230	0.002216	0.002935
350	0.001395	0.002227	0.002894
370	0.001376	0.002225	0.002699
390	0.001414	0.002313	0.002378
410	0.001452	0.002336	0.002152
430	0.001484	0.002311	0.001810
450	0.001498	0.002241	0.001525
470	0.001580	0.002144	0.001218
490	0.001618	0.002059	0.000902
510	0.001656	0.001865	0.000693
530	0.001669	0.001686	0.000459
550	0.001656	0.001530	0.000347
570	0.001515	0.001358	0.000178
590	0.001645	0.001133	0.000000
610	0.001551	0.000969	0.000000
630	0.001493	0.000755	0.000000
650	0.001392	0.000640	0.000000
670	0.001338	0.000485	0.000000
690	0.001265	0.000355	0.000000
710	0.001143	0.000270	0.000000
730	0.001054	0.000138	0.000000
750	0.000916	0.000000	0.000000
770	0.000857	0.000000	0.000000
790	0.000767	0.000000	0.000000
810	0.000650	0.000000	0.000000
830	0.000538	0.000000	0.000000
850	0.000480	0.000000	0.000000
870	0.000367	0.000000	0.000000
890	0.000296	0.000000	0.000000
910	0.000291	0.000000	0.000000
930	0.000229	0.000000	0.000000
950	0.000209	0.000000	0.000000

---

$\bar{d}_i$ in $\mu\text{m}$	$q_0$ in $\mu\text{m}^{-1}$ for $N = 250$ rpm	$q_0$ in $\mu\text{m}^{-1}$ for $N = 325$ rpm	$q_0$ in $\mu\text{m}^{-1}$ for $N = 400$ rpm
970	0.000152	0.000000	0.000000
990	0.000124	0.000000	0.000000
1010	0.000078	0.000000	0.000000
1030	0.000000	0.000000	0.000000

---

**Table S18.** Number distribution  $q_0$  for  $\varphi = 35$  vol.-% (Experiment 1).

$\bar{d}_i$ in $\mu\text{m}$	$q_0$ in $\mu\text{m}^{-1}$ for $N = 250$ rpm	$q_0$ in $\mu\text{m}^{-1}$ for $N = 325$ rpm	$q_0$ in $\mu\text{m}^{-1}$ for $N = 400$ rpm
10	0.000000	0.000000	0.000000
30	0.000431	0.000456	0.000652
50	0.000920	0.000685	0.001051
70	0.000879	0.000565	0.000841
90	0.000922	0.000554	0.000824
110	0.000638	0.000532	0.001038
130	0.000579	0.000544	0.001289
150	0.000587	0.000722	0.001683
170	0.000576	0.000913	0.002077
190	0.000610	0.001175	0.002655
210	0.000666	0.001370	0.002950
230	0.000901	0.001740	0.003254
250	0.000958	0.002083	0.003483
270	0.001116	0.002269	0.003725
290	0.001279	0.002631	0.003807
310	0.001451	0.002720	0.003666
330	0.001556	0.002815	0.003362
350	0.001642	0.002819	0.002868
370	0.001593	0.002903	0.002531
390	0.001725	0.002892	0.002064
410	0.001678	0.002688	0.001696
430	0.001768	0.002481	0.001388
450	0.001763	0.002398	0.001066
470	0.001665	0.002095	0.000776
490	0.001772	0.001878	0.000516
510	0.001806	0.001569	0.000341
530	0.001708	0.001438	0.000238
550	0.001721	0.001148	0.000157
570	0.001688	0.000998	0.000000
590	0.001654	0.000759	0.000000
610	0.001486	0.000603	0.000000
630	0.001456	0.000438	0.000000
650	0.001394	0.000371	0.000000
670	0.001300	0.000284	0.000000
690	0.001144	0.000186	0.000000
710	0.001082	0.000146	0.000000
730	0.000978	0.000099	0.000000
750	0.000777	0.000035	0.000000
770	0.000721	0.000000	0.000000
790	0.000589	0.000000	0.000000
810	0.000484	0.000000	0.000000
830	0.000452	0.000000	0.000000
850	0.000352	0.000000	0.000000
870	0.000284	0.000000	0.000000
890	0.000256	0.000000	0.000000
910	0.000203	0.000000	0.000000
930	0.000160	0.000000	0.000000
950	0.000122	0.000000	0.000000

---

$\bar{d}_i$ in $\mu\text{m}$	$q_0$ in $\mu\text{m}^{-1}$ for $N = 250$ rpm	$q_0$ in $\mu\text{m}^{-1}$ for $N = 325$ rpm	$q_0$ in $\mu\text{m}^{-1}$ for $N = 400$ rpm
970	0.000119	0.000000	0.000000
990	0.000092	0.000000	0.000000
1010	0.000079	0.000000	0.000000
1030	0.000049	0.000000	0.000000
1050	0.000043	0.000000	0.000000
1070	0.000056	0.000000	0.000000
1090	0.000030	0.000000	0.000000
1110	0.000041	0.000000	0.000000
1130	0.000000	0.000000	0.000000

---

**Table S19.** Number distribution  $q_0$  for  $\varphi = 35$  vol.-% (Experiment 2).

$\bar{d}_i$ in $\mu\text{m}$	$q_0$ in $\mu\text{m}^{-1}$ for $N = 250$ rpm	$q_0$ in $\mu\text{m}^{-1}$ for $N = 325$ rpm	$q_0$ in $\mu\text{m}^{-1}$ for $N = 400$ rpm
10	0.000000	0.000000	0.000000
30	0.000352	0.000403	0.000390
50	0.000614	0.000677	0.000753
70	0.000620	0.000518	0.000688
90	0.000639	0.000548	0.000731
110	0.000638	0.000490	0.000872
130	0.000533	0.000532	0.001139
150	0.000489	0.000649	0.001509
170	0.000608	0.000904	0.001898
190	0.000652	0.001158	0.002398
210	0.000762	0.001497	0.002828
230	0.000867	0.001731	0.003180
250	0.000999	0.002118	0.003544
270	0.001161	0.002429	0.003605
290	0.001328	0.002609	0.003723
310	0.001514	0.002741	0.003611
330	0.001654	0.002882	0.003454
350	0.001713	0.002953	0.003191
370	0.001585	0.002985	0.002821
390	0.001950	0.002690	0.002428
410	0.001741	0.002714	0.001985
430	0.001850	0.002563	0.001597
450	0.001730	0.002173	0.001230
470	0.001910	0.002107	0.000903
490	0.001755	0.001898	0.000657
510	0.001905	0.001717	0.000439
530	0.001757	0.001380	0.000316
550	0.001730	0.001175	0.000113
570	0.001772	0.000951	0.000000
590	0.001680	0.000726	0.000000
610	0.001621	0.000629	0.000000
630	0.001443	0.000461	0.000000
650	0.001390	0.000368	0.000000
670	0.001286	0.000244	0.000000
690	0.001180	0.000177	0.000000
710	0.001046	0.000127	0.000000
730	0.000918	0.000076	0.000000
750	0.000744	0.000000	0.000000
770	0.000675	0.000000	0.000000
790	0.000536	0.000000	0.000000
810	0.000524	0.000000	0.000000
830	0.000401	0.000000	0.000000
850	0.000330	0.000000	0.000000
870	0.000282	0.000000	0.000000
890	0.000253	0.000000	0.000000
910	0.000165	0.000000	0.000000
930	0.000153	0.000000	0.000000
950	0.000129	0.000000	0.000000

$\bar{d}_i$ in $\mu\text{m}$	$q_0$ in $\mu\text{m}^{-1}$ for $N = 250$ rpm	$q_0$ in $\mu\text{m}^{-1}$ for $N = 325$ rpm	$q_0$ in $\mu\text{m}^{-1}$ for $N = 400$ rpm
970	0.000098	0.000000	0.000000
990	0.000090	0.000000	0.000000
1010	0.000080	0.000000	0.000000
1030	0.000050	0.000000	0.000000
1050	0.000055	0.000000	0.000000
1070	0.000039	0.000000	0.000000
1090	0.000000	0.000000	0.000000

**Table S20.** Number distribution  $q_0$  for  $\varphi = 40$  vol.-% (Experiment 1).

$\bar{d}_i$ in $\mu\text{m}$	$q_0$ in $\mu\text{m}^{-1}$ for $N = 250$ rpm	$q_0$ in $\mu\text{m}^{-1}$ for $N = 325$ rpm	$q_0$ in $\mu\text{m}^{-1}$ for $N = 400$ rpm
10	0.000000	0.000000	0.000000
30	0.000300	0.000143	0.000422
50	0.000573	0.000245	0.000661
70	0.000544	0.000224	0.000512
90	0.000520	0.000265	0.000521
110	0.000500	0.000281	0.000609
130	0.000415	0.000338	0.000765
150	0.000489	0.000463	0.001124
170	0.000500	0.000680	0.001545
190	0.000647	0.000932	0.002023
210	0.000615	0.001319	0.002585
230	0.000842	0.001595	0.003098
250	0.000893	0.001996	0.003575
270	0.001084	0.002343	0.003830
290	0.001244	0.002589	0.004122
310	0.001284	0.002788	0.004010
330	0.001440	0.003000	0.003893
350	0.001515	0.003012	0.003522
370	0.001566	0.003103	0.003095
390	0.001673	0.003156	0.002638
410	0.001606	0.003095	0.002148
430	0.001726	0.003104	0.001698
450	0.001704	0.002822	0.001271
470	0.001711	0.002551	0.000902
490	0.001671	0.002229	0.000618
510	0.001802	0.001921	0.000426
530	0.001557	0.001551	0.000268
550	0.001669	0.001283	0.000118
570	0.001620	0.000951	0.000000
590	0.001735	0.000731	0.000000
610	0.001609	0.000535	0.000000
630	0.001482	0.000386	0.000000
650	0.001449	0.000263	0.000000
670	0.001409	0.000107	0.000000
690	0.001340	0.000000	0.000000
710	0.001184	0.000000	0.000000
730	0.001018	0.000000	0.000000
750	0.001015	0.000000	0.000000
770	0.000904	0.000000	0.000000
790	0.000771	0.000000	0.000000
810	0.000709	0.000000	0.000000
830	0.000589	0.000000	0.000000
850	0.000500	0.000000	0.000000
870	0.000453	0.000000	0.000000
890	0.000315	0.000000	0.000000
910	0.000331	0.000000	0.000000
930	0.000242	0.000000	0.000000
950	0.000169	0.000000	0.000000

$\bar{d}_i$ in $\mu\text{m}$	$q_0$ in $\mu\text{m}^{-1}$ for $N = 250$ rpm	$q_0$ in $\mu\text{m}^{-1}$ for $N = 325$ rpm	$q_0$ in $\mu\text{m}^{-1}$ for $N = 400$ rpm
970	0.000176	0.000000	0.000000
990	0.000162	0.000000	0.000000
1010	0.000118	0.000000	0.000000
1030	0.000096	0.000000	0.000000
1050	0.000091	0.000000	0.000000
1070	0.000064	0.000000	0.000000
1090	0.000053	0.000000	0.000000
1110	0.000049	0.000000	0.000000
1130	0.000040	0.000000	0.000000
1150	0.000053	0.000000	0.000000
1170	0.000040	0.000000	0.000000
1190	0.000020	0.000000	0.000000
1210	0.000022	0.000000	0.000000
1230	0.000022	0.000000	0.000000
1250	0.000027	0.000000	0.000000
1270	0.000018	0.000000	0.000000
1290	0.000016	0.000000	0.000000
1310	0.000000	0.000000	0.000000



**Table S21.** Number distribution  $q_0$  for  $\varphi = 40$  vol.-% (Experiment 2).

$\bar{d}_i$ in $\mu\text{m}$	$q_0$ in $\mu\text{m}^{-1}$ for $N = 250$ rpm	$q_0$ in $\mu\text{m}^{-1}$ for $N = 325$ rpm	$q_0$ in $\mu\text{m}^{-1}$ for $N = 400$ rpm
10	0.000000	0.000000	0.000000
30	0.000283	0.000170	0.000318
50	0.000487	0.000229	0.000540
70	0.000497	0.000238	0.000506
90	0.000478	0.000264	0.000555
110	0.000507	0.000289	0.000638
130	0.000499	0.000358	0.000810
150	0.000456	0.000496	0.001059
170	0.000495	0.000671	0.001538
190	0.000594	0.000980	0.002073
210	0.000697	0.001275	0.002613
230	0.000795	0.001602	0.003082
250	0.000850	0.002017	0.003422
270	0.001048	0.002257	0.003762
290	0.001264	0.002593	0.004008
310	0.001169	0.002802	0.003924
330	0.001401	0.002970	0.003918
350	0.001534	0.003055	0.003702
370	0.001651	0.003124	0.003292
390	0.001639	0.003095	0.002821
410	0.001567	0.003134	0.002343
430	0.001726	0.002975	0.001754
450	0.001643	0.002829	0.001239
470	0.001740	0.002622	0.000924
490	0.001712	0.002257	0.000604
510	0.001629	0.001906	0.000368
530	0.001767	0.001546	0.000185
550	0.001664	0.001265	0.000000
570	0.001670	0.000988	0.000000
590	0.001631	0.000739	0.000000
610	0.001645	0.000551	0.000000
630	0.001530	0.000357	0.000000
650	0.001492	0.000246	0.000000
670	0.001385	0.000102	0.000000
690	0.001371	0.000000	0.000000
710	0.001252	0.000000	0.000000
730	0.001116	0.000000	0.000000
750	0.001092	0.000000	0.000000
770	0.000862	0.000000	0.000000
790	0.000781	0.000000	0.000000
810	0.000731	0.000000	0.000000
830	0.000626	0.000000	0.000000
850	0.000549	0.000000	0.000000
870	0.000442	0.000000	0.000000
890	0.000359	0.000000	0.000000
910	0.000248	0.000000	0.000000
930	0.000246	0.000000	0.000000
950	0.000212	0.000000	0.000000

$\bar{d}_i$ in $\mu\text{m}$	$q_0$ in $\mu\text{m}^{-1}$ for $N = 250$ rpm	$q_0$ in $\mu\text{m}^{-1}$ for $N = 325$ rpm	$q_0$ in $\mu\text{m}^{-1}$ for $N = 400$ rpm
970	0.000196	0.000000	0.000000
990	0.000151	0.000000	0.000000
1010	0.000105	0.000000	0.000000
1030	0.000085	0.000000	0.000000
1050	0.000069	0.000000	0.000000
1070	0.000079	0.000000	0.000000
1090	0.000091	0.000000	0.000000
1110	0.000050	0.000000	0.000000
1130	0.000061	0.000000	0.000000
1150	0.000040	0.000000	0.000000
1170	0.000016	0.000000	0.000000
1190	0.000014	0.000000	0.000000
1210	0.000010	0.000000	0.000000
1230	0.000000	0.000000	0.000000

**Table S22.** Number distribution  $q_0$  for  $\varphi = 45$  vol.-% (Experiment 1).

$\bar{d}_i$ in $\mu\text{m}$	$q_0$ in $\mu\text{m}^{-1}$ for $N = 250$ rpm	$q_0$ in $\mu\text{m}^{-1}$ for $N = 325$ rpm	$q_0$ in $\mu\text{m}^{-1}$ for $N = 400$ rpm
10	0.000000	0.000000	0.000000
30	0.000235	0.000115	0.000331
50	0.000374	0.000175	0.000473
70	0.000342	0.000164	0.000373
90	0.000421	0.000174	0.000389
110	0.000317	0.000172	0.000418
130	0.000314	0.000233	0.000527
150	0.000317	0.000318	0.000750
170	0.000334	0.000473	0.001111
190	0.000378	0.000614	0.001481
210	0.000449	0.000889	0.001832
230	0.000485	0.001146	0.002284
250	0.000712	0.001392	0.002678
270	0.000768	0.001671	0.002961
290	0.000883	0.001923	0.003484
310	0.001026	0.002114	0.003773
330	0.001152	0.002415	0.004032
350	0.001296	0.002731	0.004010
370	0.001323	0.002988	0.003861
390	0.001477	0.003192	0.003569
410	0.001477	0.003274	0.003055
430	0.001503	0.003280	0.002442
450	0.001454	0.003146	0.001900
470	0.001552	0.003021	0.001449
490	0.001565	0.002722	0.001025
510	0.001608	0.002375	0.000761
530	0.001565	0.002059	0.000467
550	0.001591	0.001703	0.000315
570	0.001659	0.001405	0.000194
590	0.001676	0.001123	0.000054
610	0.001610	0.000899	0.000000
630	0.001644	0.000664	0.000000
650	0.001636	0.000509	0.000000
670	0.001527	0.000387	0.000000
690	0.001454	0.000266	0.000000
710	0.001418	0.000198	0.000000
730	0.001358	0.000067	0.000000
750	0.001341	0.000000	0.000000
770	0.001336	0.000000	0.000000
790	0.001146	0.000000	0.000000
810	0.001014	0.000000	0.000000
830	0.000849	0.000000	0.000000
850	0.000783	0.000000	0.000000
870	0.000778	0.000000	0.000000
890	0.000699	0.000000	0.000000
910	0.000535	0.000000	0.000000
930	0.000473	0.000000	0.000000
950	0.000379	0.000000	0.000000

$\bar{d}_i$ in $\mu\text{m}$	$q_0$ in $\mu\text{m}^{-1}$ for $N = 250$ rpm	$q_0$ in $\mu\text{m}^{-1}$ for $N = 325$ rpm	$q_0$ in $\mu\text{m}^{-1}$ for $N = 400$ rpm
970	0.000304	0.000000	0.000000
990	0.000212	0.000000	0.000000
1010	0.000207	0.000000	0.000000
1030	0.000156	0.000000	0.000000
1050	0.000148	0.000000	0.000000
1070	0.000101	0.000000	0.000000
1090	0.000094	0.000000	0.000000
1110	0.000079	0.000000	0.000000
1130	0.000043	0.000000	0.000000
1150	0.000064	0.000000	0.000000
1170	0.000049	0.000000	0.000000
1190	0.000038	0.000000	0.000000
1210	0.000043	0.000000	0.000000
1230	0.000028	0.000000	0.000000
1250	0.000023	0.000000	0.000000
1270	0.000026	0.000000	0.000000
1290	0.000015	0.000000	0.000000
1310	0.000034	0.000000	0.000000
1330	0.000026	0.000000	0.000000
1350	0.000009	0.000000	0.000000
1370	0.000026	0.000000	0.000000
1390	0.000017	0.000000	0.000000
1410	0.000011	0.000000	0.000000
1430	0.000009	0.000000	0.000000
1450	0.000002	0.000000	0.000000
1470	0.000000	0.000000	0.000000

**Table S23.** Number distribution  $q_0$  for  $\varphi = 45$  vol.-% (Experiment 2).

$\bar{d}_i$ in $\mu\text{m}$	$q_0$ in $\mu\text{m}^{-1}$ for $N = 250$ rpm	$q_0$ in $\mu\text{m}^{-1}$ for $N = 325$ rpm	$q_0$ in $\mu\text{m}^{-1}$ for $N = 400$ rpm
10	0.000000	0.000000	0.000000
30	0.000235	0.000119	0.000253
50	0.000377	0.000202	0.000443
70	0.000383	0.000176	0.000367
90	0.000355	0.000189	0.000398
110	0.000327	0.000206	0.000450
130	0.000345	0.000238	0.000554
150	0.000273	0.000335	0.000766
170	0.000377	0.000451	0.001142
190	0.000439	0.000632	0.001530
210	0.000431	0.000892	0.001835
230	0.000594	0.001116	0.002268
250	0.000698	0.001423	0.002722
270	0.000810	0.001703	0.003157
290	0.000979	0.001960	0.003597
310	0.001165	0.002143	0.003945
330	0.001223	0.002495	0.004161
350	0.001245	0.002768	0.004178
370	0.001305	0.003003	0.003911
390	0.001500	0.003226	0.003489
410	0.001484	0.003295	0.002960
430	0.001532	0.003267	0.002388
450	0.001594	0.003167	0.001806
470	0.001672	0.002955	0.001355
490	0.001508	0.002662	0.000951
510	0.001612	0.002359	0.000627
530	0.001735	0.001989	0.000404
550	0.001624	0.001699	0.000253
570	0.001642	0.001380	0.000090
590	0.001703	0.001106	0.000000
610	0.001640	0.000884	0.000000
630	0.001548	0.000647	0.000000
650	0.001550	0.000494	0.000000
670	0.001408	0.000365	0.000000
690	0.001442	0.000271	0.000000
710	0.001348	0.000178	0.000000
730	0.001324	0.000005	0.000000
750	0.001245	0.000000	0.000000
770	0.001201	0.000000	0.000000
790	0.001081	0.000000	0.000000
810	0.001007	0.000000	0.000000
830	0.000949	0.000000	0.000000
850	0.000778	0.000000	0.000000
870	0.000596	0.000000	0.000000
890	0.000600	0.000000	0.000000
910	0.000481	0.000000	0.000000
930	0.000417	0.000000	0.000000
950	0.000369	0.000000	0.000000

$\bar{d}_i$ in $\mu\text{m}$	$q_0$ in $\mu\text{m}^{-1}$ for $N = 250$ rpm	$q_0$ in $\mu\text{m}^{-1}$ for $N = 325$ rpm	$q_0$ in $\mu\text{m}^{-1}$ for $N = 400$ rpm
970	0.000253	0.000000	0.000000
990	0.000219	0.000000	0.000000
1010	0.000213	0.000000	0.000000
1030	0.000138	0.000000	0.000000
1050	0.000138	0.000000	0.000000
1070	0.000156	0.000000	0.000000
1090	0.000074	0.000000	0.000000
1110	0.000070	0.000000	0.000000
1130	0.000064	0.000000	0.000000
1150	0.000052	0.000000	0.000000
1170	0.000036	0.000000	0.000000
1190	0.000038	0.000000	0.000000
1210	0.000034	0.000000	0.000000
1230	0.000032	0.000000	0.000000
1250	0.000032	0.000000	0.000000
1270	0.000038	0.000000	0.000000
1290	0.000016	0.000000	0.000000
1310	0.000010	0.000000	0.000000
1330	0.000030	0.000000	0.000000
1350	0.000012	0.000000	0.000000
1370	0.000014	0.000000	0.000000
1390	0.000014	0.000000	0.000000
1410	0.000018	0.000000	0.000000
1430	0.000012	0.000000	0.000000
1450	0.000014	0.000000	0.000000
1470	0.000008	0.000000	0.000000
1490	0.000012	0.000000	0.000000
1510	0.000014	0.000000	0.000000
1530	0.000022	0.000000	0.000000
1550	0.000014	0.000000	0.000000
1570	0.000020	0.000000	0.000000
1590	0.000018	0.000000	0.000000
1610	0.000016	0.000000	0.000000
1630	0.000000	0.000000	0.000000

**Table S24.** Number distribution  $q_0$  for  $\varphi = 50$  vol.-% (Experiment 1).

$\bar{d}_i$ in $\mu\text{m}$	$q_0$ in $\mu\text{m}^{-1}$ for $N = 250$ rpm	$q_0$ in $\mu\text{m}^{-1}$ for $N = 325$ rpm	$q_0$ in $\mu\text{m}^{-1}$ for $N = 400$ rpm
10	0.000000	0.000000	0.000000
30	0.000066	0.000191	0.000484
50	0.000117	0.000303	0.000626
70	0.000116	0.000204	0.000392
90	0.000132	0.000193	0.000275
110	0.000119	0.000171	0.000332
130	0.000100	0.000183	0.000307
150	0.000109	0.000228	0.000502
170	0.000115	0.000289	0.000765
190	0.000153	0.000457	0.001128
210	0.000222	0.000650	0.001561
230	0.000283	0.000829	0.001795
250	0.000353	0.001091	0.002440
270	0.000459	0.001252	0.002854
290	0.000555	0.001603	0.003381
310	0.000677	0.002003	0.004092
330	0.000735	0.002351	0.004254
350	0.000921	0.002771	0.004592
370	0.001087	0.003173	0.004127
390	0.001174	0.003492	0.003707
410	0.001312	0.003592	0.003163
430	0.001508	0.003567	0.002490
450	0.001637	0.003543	0.002060
470	0.001833	0.003262	0.001548
490	0.001924	0.002889	0.001125
510	0.002117	0.002535	0.000755
530	0.002209	0.002116	0.000487
550	0.002207	0.001747	0.000294
570	0.002302	0.001371	0.000161
590	0.002349	0.001085	0.000133
610	0.002273	0.000872	0.000070
630	0.002197	0.000644	0.000085
650	0.002172	0.000469	0.000016
670	0.002033	0.000351	0.000000
690	0.001764	0.000231	0.000000
710	0.001764	0.000160	0.000000
730	0.001600	0.000121	0.000000
750	0.001414	0.000011	0.000000
770	0.001203	0.000000	0.000000
790	0.001073	0.000000	0.000000
810	0.000975	0.000000	0.000000
830	0.000864	0.000000	0.000000
850	0.000731	0.000000	0.000000
870	0.000623	0.000000	0.000000
890	0.000470	0.000000	0.000000
910	0.000423	0.000000	0.000000
930	0.000367	0.000000	0.000000
950	0.000279	0.000000	0.000000

$\bar{d}_i$ in $\mu\text{m}$	$q_0$ in $\mu\text{m}^{-1}$ for $N = 250$ rpm	$q_0$ in $\mu\text{m}^{-1}$ for $N = 325$ rpm	$q_0$ in $\mu\text{m}^{-1}$ for $N = 400$ rpm
970	0.000214	0.000000	0.000000
990	0.000175	0.000000	0.000000
1010	0.000162	0.000000	0.000000
1030	0.000120	0.000000	0.000000
1050	0.000089	0.000000	0.000000
1070	0.000085	0.000000	0.000000
1090	0.000037	0.000000	0.000000
1110	0.000000	0.000000	0.000000



**Table S25.** Number distribution  $q_0$  for  $\varphi = 50$  vol.-% (Experiment 2).

$\bar{d}_i$ in $\mu\text{m}$	$q_0$ in $\mu\text{m}^{-1}$ for $N = 250$ rpm	$q_0$ in $\mu\text{m}^{-1}$ for $N = 325$ rpm	$q_0$ in $\mu\text{m}^{-1}$ for $N = 400$ rpm
10	0.000000	0.000000	0.000000
30	0.000141	0.000178	0.000384
50	0.000247	0.000285	0.000576
70	0.000183	0.000216	0.000380
90	0.000169	0.000194	0.000320
110	0.000156	0.000195	0.000335
130	0.000125	0.000224	0.000393
150	0.000121	0.000256	0.000536
170	0.000120	0.000330	0.000801
190	0.000165	0.000485	0.001138
210	0.000216	0.000651	0.001440
230	0.000286	0.000863	0.001860
250	0.000367	0.001089	0.002344
270	0.000467	0.001359	0.003006
290	0.000594	0.001693	0.003660
310	0.000641	0.002110	0.004094
330	0.000756	0.002468	0.004513
350	0.000856	0.002943	0.004509
370	0.000990	0.003285	0.004280
390	0.001035	0.003628	0.003680
410	0.001087	0.003733	0.003070
430	0.001297	0.003725	0.002562
450	0.001366	0.003524	0.001869
470	0.001506	0.003154	0.001463
490	0.001592	0.002759	0.001013
510	0.001698	0.002392	0.000670
530	0.001913	0.001984	0.000450
550	0.002049	0.001614	0.000263
570	0.002039	0.001250	0.000212
590	0.002193	0.000999	0.000143
610	0.002292	0.000758	0.000037
630	0.002324	0.000580	0.000000
650	0.002160	0.000432	0.000000
670	0.002192	0.000275	0.000000
690	0.002008	0.000202	0.000000
710	0.001901	0.000145	0.000000
730	0.001787	0.000021	0.000000
750	0.001620	0.000000	0.000000
770	0.001486	0.000000	0.000000
790	0.001310	0.000000	0.000000
810	0.001083	0.000000	0.000000
830	0.000906	0.000000	0.000000
850	0.000890	0.000000	0.000000
870	0.000692	0.000000	0.000000
890	0.000600	0.000000	0.000000
910	0.000405	0.000000	0.000000
930	0.000384	0.000000	0.000000
950	0.000285	0.000000	0.000000

$\bar{d}_i$ in $\mu\text{m}$	$q_0$ in $\mu\text{m}^{-1}$ for $N = 250$ rpm	$q_0$ in $\mu\text{m}^{-1}$ for $N = 325$ rpm	$q_0$ in $\mu\text{m}^{-1}$ for $N = 400$ rpm
970	0.000229	0.000000	0.000000
990	0.000207	0.000000	0.000000
1010	0.000161	0.000000	0.000000
1030	0.000141	0.000000	0.000000
1050	0.000103	0.000000	0.000000
1070	0.000103	0.000000	0.000000
1090	0.000044	0.000000	0.000000
1110	0.000042	0.000000	0.000000
1130	0.000047	0.000000	0.000000
1150	0.000042	0.000000	0.000000
1170	0.000038	0.000000	0.000000
1190	0.000023	0.000000	0.000000
1210	0.000017	0.000000	0.000000
1230	0.000019	0.000000	0.000000
1250	0.000021	0.000000	0.000000
1270	0.000019	0.000000	0.000000
1290	0.000024	0.000000	0.000000
1310	0.000013	0.000000	0.000000
1330	0.000005	0.000000	0.000000
1350	0.000000	0.000000	0.000000

**Table S26.** Sauter mean diameter  $d_{32}$  for  $N = 250$  rpm.

$\varphi$ in vol.-%	Experiment 1		Experiment 2	
	$d_{32}$ in $\mu\text{m}$	Number of particles $Z$	$d_{32}$ in $\mu\text{m}$	Number of particles $Z$
5	363.6	112712	361.5	112492
10	448.7	144801	447.3	146289
15	541.3	121473	538.4	123703
20	511.1	76300	508.3	90942
25	573.4	113690	573.0	114784
30	654.7	75093	650.2	77578
35	637.3	26577	628.3	32075
40	677.9	22505	673.6	24766
45	732.2	26615	740.5	25067
50	690.6	64080	715.9	41245

**Table S27.** Sauter mean diameter  $d_{32}$  for  $N = 325$  rpm.

$\varphi$ in vol.-%	Experiment 1		Experiment 2	
	$d_{32}$ in $\mu\text{m}$	Number of particles $Z$	$d_{32}$ in $\mu\text{m}$	Number of particles $Z$
5	244.2	252350	244.0	252937
10	320.8	186810	320.2	187141
15	378.8	169519	378.7	168976
20	353.1	136499	354.0	136510
25	405.3	156998	404.5	169900
30	490.4	94751	489.3	95239
35	462.3	45964	459.7	44965
40	451.8	121131	451.7	115233
45	485.0	124036	482.5	120877
50	485.9	77975	478.2	98466

**Table S28.** Sauter mean diameter  $d_{32}$  for  $N = 400$  rpm.

$\varphi$ in vol.-%	Experiment 1		Experiment 2	
	$d_{32}$ in $\mu\text{m}$	Number of particles $Z$	$d_{32}$ in $\mu\text{m}$	Number of particles $Z$
5	197.0	351343	-	-
10	252.1	216832	251.7	214930
15	291.6	166507	288.9	185070
20	276.4	211934	276.4	237206
25	319.9	79368	314.2	108063
30	380.3	85099	379.4	86026
35	354.5	27303	361.9	106587
40	363.3	79995	361.8	122358
45	389.8	90932	384.0	118657
50	396.1	15822	391.8	44630

**Table S29.** Volume distribution  $q_3$  for  $\varphi = 5$  vol.-% (Experiment 1).

$\bar{d}_i$ in $\mu\text{m}$	$q_3$ in $\mu\text{m}^{-1}$ for $N = 250$ rpm	$q_3$ in $\mu\text{m}^{-1}$ for $N = 325$ rpm	$q_3$ in $\mu\text{m}^{-1}$ for $N = 400$ rpm
10	0.000000	0.000000	0.000000
30	0.000006	0.000023	0.000064
50	0.000056	0.000174	0.000417
70	0.000111	0.000303	0.000754
90	0.000169	0.000500	0.001277
110	0.000235	0.000835	0.002020
130	0.000321	0.001311	0.002857
150	0.000443	0.001870	0.003745
170	0.000596	0.002574	0.004571
190	0.000775	0.003197	0.005165
210	0.000992	0.003809	0.005499
230	0.001259	0.004293	0.005503
250	0.001519	0.004679	0.005293
270	0.001773	0.004716	0.004681
290	0.002108	0.004743	0.003944
310	0.002350	0.004526	0.003204
330	0.002571	0.003916	0.001004
350	0.002778	0.003451	0.000000
370	0.002824	0.002914	0.000000
390	0.003014	0.002167	0.000000
410	0.003181	0.000000	0.000000
430	0.003010	0.000000	0.000000
450	0.003011	0.000000	0.000000
470	0.002831	0.000000	0.000000
490	0.002716	0.000000	0.000000
510	0.002592	0.000000	0.000000
530	0.002356	0.000000	0.000000
550	0.002035	0.000000	0.000000
570	0.001812	0.000000	0.000000
590	0.001577	0.000000	0.000000
610	0.000979	0.000000	0.000000
630	0.000000	0.000000	0.000000

**Table S30.** Volume distribution  $q_3$  for  $\varphi = 5$  vol.-% (Experiment 2).

$\bar{d}_i$ in $\mu\text{m}$	$q_3$ in $\mu\text{m}^{-1}$ for $N = 250$ rpm	$q_3$ in $\mu\text{m}^{-1}$ for $N = 325$ rpm
10	0.000000	0.000000
30	0.000006	0.000023
50	0.000058	0.000175
70	0.000114	0.000309
90	0.000171	0.000502
110	0.000240	0.000839
130	0.000322	0.001300
150	0.000458	0.001916
170	0.000593	0.002569
190	0.000800	0.003194
210	0.001021	0.003861
230	0.001266	0.004217
250	0.001555	0.004639
270	0.001869	0.004737
290	0.002162	0.004773
310	0.002383	0.004438
330	0.002577	0.004097
350	0.002849	0.003454
370	0.002882	0.002810
390	0.003138	0.002146
410	0.003129	0.000000
430	0.002980	0.000000
450	0.002981	0.000000
470	0.002904	0.000000
490	0.002651	0.000000
510	0.002328	0.000000
530	0.002112	0.000000
550	0.001896	0.000000
570	0.001841	0.000000
590	0.001482	0.000000
610	0.001233	0.000000
630	0.000000	0.000000

**Table S31.** Volume distribution  $q_3$  for  $\varphi = 10$  vol.-% (Experiment 1).

$\bar{d}_i$ in $\mu\text{m}$	$q_3$ in $\mu\text{m}^{-1}$ for $N = 250$ rpm	$q_3$ in $\mu\text{m}^{-1}$ for $N = 325$ rpm	$q_3$ in $\mu\text{m}^{-1}$ for $N = 400$ rpm
10	0.000000	0.000000	0.000000
30	0.000000	0.000002	0.000005
50	0.000007	0.000019	0.000040
70	0.000019	0.000041	0.000099
90	0.000033	0.000075	0.000220
110	0.000054	0.000146	0.000469
130	0.000085	0.000281	0.000938
150	0.000132	0.000507	0.001643
170	0.000198	0.000848	0.002575
190	0.000297	0.001285	0.003528
210	0.000413	0.001802	0.004342
230	0.000542	0.002231	0.004956
250	0.000718	0.002819	0.005330
270	0.000859	0.003201	0.005302
290	0.001127	0.003632	0.005177
310	0.001310	0.003857	0.004582
330	0.001556	0.004072	0.003929
350	0.001760	0.004138	0.003063
370	0.002058	0.004077	0.002363
390	0.002219	0.003734	0.001440
410	0.002452	0.003474	0.000000
430	0.002667	0.003120	0.000000
450	0.002705	0.002572	0.000000
470	0.002842	0.002116	0.000000
490	0.002877	0.001609	0.000000
510	0.002872	0.000344	0.000000
530	0.002866	0.000000	0.000000
550	0.002509	0.000000	0.000000
570	0.002450	0.000000	0.000000
590	0.002431	0.000000	0.000000
610	0.002171	0.000000	0.000000
630	0.001901	0.000000	0.000000
650	0.001711	0.000000	0.000000
670	0.001510	0.000000	0.000000
690	0.001287	0.000000	0.000000
710	0.001071	0.000000	0.000000
730	0.000292	0.000000	0.000000
750	0.000000	0.000000	0.000000

**Table S32.** Volume distribution  $q_3$  for  $\varphi = 10$  vol.-% (Experiment 2).

$\bar{d}_i$ in $\mu\text{m}$	$q_3$ in $\mu\text{m}^{-1}$ for $N = 250$ rpm	$q_3$ in $\mu\text{m}^{-1}$ for $N = 325$ rpm	$q_3$ in $\mu\text{m}^{-1}$ for $N = 400$ rpm
10	0.000000	0.000000	0.000000
30	0.000000	0.000002	0.000005
50	0.000007	0.000018	0.000041
70	0.000019	0.000040	0.000099
90	0.000034	0.000074	0.000221
110	0.000056	0.000145	0.000478
130	0.000087	0.000280	0.000947
150	0.000135	0.000511	0.001670
170	0.000208	0.000862	0.002598
190	0.000298	0.001313	0.003500
210	0.000411	0.001817	0.004351
230	0.000551	0.002301	0.004972
250	0.000721	0.002804	0.005367
270	0.000891	0.003197	0.005316
290	0.001126	0.003633	0.005035
310	0.001290	0.003837	0.004597
330	0.001570	0.004127	0.003954
350	0.001804	0.004105	0.003243
370	0.002020	0.004067	0.002345
390	0.002191	0.003849	0.001260
410	0.002419	0.003485	0.000000
430	0.002682	0.003061	0.000000
450	0.002718	0.002516	0.000000
470	0.002856	0.002022	0.000000
490	0.002801	0.001575	0.000000
510	0.002896	0.000358	0.000000
530	0.002913	0.000000	0.000000
550	0.002735	0.000000	0.000000
570	0.002589	0.000000	0.000000
590	0.002455	0.000000	0.000000
610	0.002216	0.000000	0.000000
630	0.001945	0.000000	0.000000
650	0.001797	0.000000	0.000000
670	0.001492	0.000000	0.000000
690	0.001230	0.000000	0.000000
710	0.000838	0.000000	0.000000
730	0.000000	0.000000	0.000000
750	0.000000	0.000000	0.000000

**Table S33.** Volume distribution  $q_3$  for  $\varphi = 15$  vol.-% (Experiment 1).

$\bar{d}_i$ in $\mu\text{m}$	$q_3$ in $\mu\text{m}^{-1}$ for $N = 250$ rpm	$q_3$ in $\mu\text{m}^{-1}$ for $N = 325$ rpm	$q_3$ in $\mu\text{m}^{-1}$ for $N = 400$ rpm
10	0.000000	0.000000	0.000000
30	0.000000	0.000002	0.000005
50	0.000005	0.000013	0.000032
70	0.000011	0.000024	0.000061
90	0.000020	0.000041	0.000115
110	0.000032	0.000074	0.000234
130	0.000047	0.000134	0.000451
150	0.000074	0.000235	0.000830
170	0.000106	0.000398	0.001354
190	0.000147	0.000609	0.001943
210	0.000195	0.000874	0.002613
230	0.000255	0.001145	0.003165
250	0.000325	0.001474	0.003645
270	0.000415	0.001762	0.004147
290	0.000514	0.002113	0.004420
310	0.000609	0.002492	0.004552
330	0.000721	0.002762	0.004483
350	0.000841	0.002994	0.004351
370	0.000998	0.003225	0.003892
390	0.001151	0.003352	0.003319
410	0.001318	0.003510	0.002686
430	0.001445	0.003491	0.002114
450	0.001650	0.003430	0.001569
470	0.001765	0.003123	0.000018
490	0.001893	0.003064	0.000000
510	0.001989	0.002561	0.000000
530	0.002178	0.002241	0.000000
550	0.002272	0.001928	0.000000
570	0.002248	0.001686	0.000000
590	0.002424	0.001242	0.000000
610	0.002457	0.000000	0.000000
630	0.002484	0.000000	0.000000
650	0.002306	0.000000	0.000000
670	0.002235	0.000000	0.000000
690	0.002204	0.000000	0.000000
710	0.002041	0.000000	0.000000
730	0.001823	0.000000	0.000000
750	0.001767	0.000000	0.000000
770	0.001550	0.000000	0.000000
790	0.001447	0.000000	0.000000
810	0.001287	0.000000	0.000000
830	0.001112	0.000000	0.000000
850	0.000999	0.000000	0.000000
870	0.000641	0.000000	0.000000
890	0.000000	0.000000	0.000000



**Table S34.** Volume distribution  $q_3$  for  $\varphi = 15$  vol.-% (Experiment 2).

$\bar{d}_i$ in $\mu\text{m}$	$q_3$ in $\mu\text{m}^{-1}$ for $N = 250$ rpm	$q_3$ in $\mu\text{m}^{-1}$ for $N = 325$ rpm	$q_3$ in $\mu\text{m}^{-1}$ for $N = 400$ rpm
10	0.000000	0.000000	0.000000
30	0.000000	0.000002	0.000005
50	0.000005	0.000013	0.000032
70	0.000012	0.000024	0.000061
90	0.000021	0.000040	0.000121
110	0.000034	0.000073	0.000247
130	0.000049	0.000131	0.000480
150	0.000076	0.000240	0.000861
170	0.000108	0.000393	0.001403
190	0.000156	0.000605	0.002059
210	0.000204	0.000863	0.002706
230	0.000273	0.001161	0.003273
250	0.000345	0.001461	0.003805
270	0.000414	0.001794	0.004201
290	0.000523	0.002132	0.004475
310	0.000618	0.002436	0.004509
330	0.000744	0.002766	0.004482
350	0.000871	0.003008	0.004270
370	0.000989	0.003304	0.003809
390	0.001159	0.003420	0.003313
410	0.001334	0.003410	0.002687
430	0.001474	0.003494	0.002010
450	0.001656	0.003331	0.001191
470	0.001748	0.003295	0.000000
490	0.001961	0.002953	0.000000
510	0.002083	0.002618	0.000000
530	0.002135	0.002294	0.000000
550	0.002299	0.001829	0.000000
570	0.002420	0.001674	0.000000
590	0.002366	0.001238	0.000000
610	0.002436	0.000000	0.000000
630	0.002371	0.000000	0.000000
650	0.002346	0.000000	0.000000
670	0.002330	0.000000	0.000000
690	0.002069	0.000000	0.000000
710	0.001920	0.000000	0.000000
730	0.001915	0.000000	0.000000
750	0.001720	0.000000	0.000000
770	0.001504	0.000000	0.000000
790	0.001428	0.000000	0.000000
810	0.001191	0.000000	0.000000
830	0.001109	0.000000	0.000000
850	0.000924	0.000000	0.000000
870	0.000660	0.000000	0.000000
890	0.000000	0.000000	0.000000

**Table S35.** Volume distribution  $q_3$  for  $\varphi = 20$  vol.-% (Experiment 1).

$\bar{d}_i$ in $\mu\text{m}$	$q_3$ in $\mu\text{m}^{-1}$ for $N = 250$ rpm	$q_3$ in $\mu\text{m}^{-1}$ for $N = 325$ rpm	$q_3$ in $\mu\text{m}^{-1}$ for $N = 400$ rpm
10	0.000000	0.000000	0.000000
30	0.000001	0.000001	0.000003
50	0.000003	0.000008	0.000018
70	0.000006	0.000013	0.000033
90	0.000010	0.000022	0.000068
110	0.000015	0.000041	0.000154
130	0.000022	0.000083	0.000351
150	0.000034	0.000165	0.000741
170	0.000058	0.000335	0.001402
190	0.000094	0.000608	0.002343
210	0.000156	0.001001	0.003385
230	0.000223	0.001459	0.004481
250	0.000347	0.002068	0.005376
270	0.000473	0.002611	0.005683
290	0.000657	0.003269	0.005840
310	0.000811	0.003631	0.005322
330	0.001053	0.004138	0.004714
350	0.001250	0.004253	0.003845
370	0.001412	0.004210	0.002920
390	0.001646	0.004106	0.002180
410	0.001839	0.003817	0.001140
430	0.001999	0.003528	0.000000
450	0.002183	0.002979	0.000000
470	0.002421	0.002463	0.000000
490	0.002510	0.002015	0.000000
510	0.002556	0.001602	0.000000
530	0.002651	0.001257	0.000000
550	0.002548	0.000318	0.000000
570	0.002612	0.000000	0.000000
590	0.002566	0.000000	0.000000
610	0.002438	0.000000	0.000000
630	0.002354	0.000000	0.000000
650	0.002124	0.000000	0.000000
670	0.001893	0.000000	0.000000
690	0.001802	0.000000	0.000000
710	0.001565	0.000000	0.000000
730	0.001400	0.000000	0.000000
750	0.001132	0.000000	0.000000
770	0.000985	0.000000	0.000000
790	0.000801	0.000000	0.000000
810	0.000669	0.000000	0.000000
830	0.000658	0.000000	0.000000
850	0.000023	0.000000	0.000000
870	0.000000	0.000000	0.000000

**Table S36.** Volume distribution  $q_3$  for  $\varphi = 20$  vol.-% (Experiment 2).

$\bar{d}_i$ in $\mu\text{m}$	$q_3$ in $\mu\text{m}^{-1}$ for $N = 250$ rpm	$q_3$ in $\mu\text{m}^{-1}$ for $N = 325$ rpm	$q_3$ in $\mu\text{m}^{-1}$ for $N = 400$ rpm
10	0.000000	0.000000	0.000000
30	0.000000	0.000001	0.000002
50	0.000003	0.000007	0.000014
70	0.000005	0.000013	0.000029
90	0.000008	0.000023	0.000062
110	0.000013	0.000040	0.000142
130	0.000021	0.000079	0.000325
150	0.000034	0.000170	0.000732
170	0.000057	0.000330	0.001397
190	0.000094	0.000593	0.002360
210	0.000156	0.000991	0.003451
230	0.000230	0.001463	0.004526
250	0.000344	0.002062	0.005464
270	0.000491	0.002610	0.005824
290	0.000649	0.003128	0.005844
310	0.000829	0.003634	0.005260
330	0.001049	0.003992	0.004581
350	0.001243	0.004166	0.003833
370	0.001481	0.004296	0.002918
390	0.001713	0.004094	0.002054
410	0.001904	0.003929	0.001183
430	0.002045	0.003583	0.000000
450	0.002285	0.003025	0.000000
470	0.002397	0.002532	0.000000
490	0.002528	0.002095	0.000000
510	0.002601	0.001620	0.000000
530	0.002715	0.001336	0.000000
550	0.002657	0.000188	0.000000
570	0.002565	0.000000	0.000000
590	0.002546	0.000000	0.000000
610	0.002465	0.000000	0.000000
630	0.002318	0.000000	0.000000
650	0.002034	0.000000	0.000000
670	0.002028	0.000000	0.000000
690	0.001804	0.000000	0.000000
710	0.001668	0.000000	0.000000
730	0.001407	0.000000	0.000000
750	0.001229	0.000000	0.000000
770	0.000984	0.000000	0.000000
790	0.000767	0.000000	0.000000
810	0.000634	0.000000	0.000000
830	0.000000	0.000000	0.000000

**Table S37.** Volume distribution  $q_3$  for  $\varphi = 25$  vol.-% (Experiment 1).

$\bar{d}_i$ in $\mu\text{m}$	$q_3$ in $\mu\text{m}^{-1}$ for $N = 250$ rpm	$q_3$ in $\mu\text{m}^{-1}$ for $N = 325$ rpm	$q_3$ in $\mu\text{m}^{-1}$ for $N = 400$ rpm
10	0.000000	0.000000	0.000000
30	0.000000	0.000000	0.000002
50	0.000001	0.000001	0.000015
70	0.000004	0.000005	0.000032
90	0.000007	0.000011	0.000066
110	0.000011	0.000022	0.000120
130	0.000017	0.000048	0.000231
150	0.000028	0.000097	0.000403
170	0.000044	0.000185	0.000700
190	0.000067	0.000337	0.001093
210	0.000097	0.000537	0.001628
230	0.000143	0.000791	0.002193
250	0.000207	0.001146	0.002821
270	0.000276	0.001514	0.003450
290	0.000380	0.001896	0.003952
310	0.000474	0.002279	0.004505
330	0.000600	0.002681	0.004839
350	0.000738	0.002941	0.004786
370	0.000860	0.003232	0.004615
390	0.001042	0.003323	0.004088
410	0.001159	0.003366	0.003562
430	0.001335	0.003455	0.002792
450	0.001514	0.003315	0.002185
470	0.001619	0.003143	0.001534
490	0.001768	0.002737	0.000389
510	0.001932	0.002469	0.000000
530	0.002056	0.002164	0.000000
550	0.002271	0.001818	0.000000
570	0.002217	0.001559	0.000000
590	0.002324	0.001246	0.000000
610	0.002325	0.000962	0.000000
630	0.002403	0.000804	0.000000
650	0.002262	0.000677	0.000000
670	0.002254	0.000518	0.000000
690	0.002141	0.000441	0.000000
710	0.001994	0.000281	0.000000
730	0.001946	0.000000	0.000000
750	0.001782	0.000000	0.000000
770	0.001556	0.000000	0.000000
790	0.001581	0.000000	0.000000
810	0.001285	0.000000	0.000000
830	0.001106	0.000000	0.000000
850	0.001055	0.000000	0.000000
870	0.000941	0.000000	0.000000
890	0.000771	0.000000	0.000000
910	0.000747	0.000000	0.000000
930	0.000630	0.000000	0.000000
950	0.000028	0.000000	0.000000

---

$\bar{d}_i$ in $\mu\text{m}$	$q_3$ in $\mu\text{m}^{-1}$ for $N = 250$ rpm	$q_3$ in $\mu\text{m}^{-1}$ for $N = 325$ rpm	$q_3$ in $\mu\text{m}^{-1}$ for $N = 400$ rpm
970	0.000000	0.000000	0.000000

---

**Table S38.** Volume distribution  $q_3$  for  $\varphi = 25$  vol.-% (Experiment 2).

$\bar{d}_i$ in $\mu\text{m}$	$q_3$ in $\mu\text{m}^{-1}$ for $N = 250$ rpm	$q_3$ in $\mu\text{m}^{-1}$ for $N = 325$ rpm	$q_3$ in $\mu\text{m}^{-1}$ for $N = 400$ rpm
10	0.000000	0.000000	0.000000
30	0.000000	0.000000	0.000002
50	0.000002	0.000001	0.000013
70	0.000005	0.000005	0.000032
90	0.000007	0.000012	0.000072
110	0.000011	0.000023	0.000144
130	0.000016	0.000047	0.000247
150	0.000027	0.000098	0.000477
170	0.000040	0.000182	0.000798
190	0.000062	0.000329	0.001212
210	0.000095	0.000530	0.001732
230	0.000139	0.000786	0.002387
250	0.000191	0.001136	0.003065
270	0.000267	0.001456	0.003677
290	0.000345	0.001906	0.004240
310	0.000448	0.002246	0.004609
330	0.000572	0.002656	0.004798
350	0.000686	0.002977	0.004793
370	0.000847	0.003249	0.004373
390	0.001005	0.003384	0.003959
410	0.001165	0.003523	0.003324
430	0.001358	0.003529	0.002624
450	0.001498	0.003414	0.002182
470	0.001662	0.003136	0.001242
490	0.001822	0.002846	0.000000
510	0.001952	0.002471	0.000000
530	0.002120	0.002239	0.000000
550	0.002221	0.001829	0.000000
570	0.002327	0.001561	0.000000
590	0.002414	0.001224	0.000000
610	0.002385	0.000978	0.000000
630	0.002468	0.000768	0.000000
650	0.002376	0.000645	0.000000
670	0.002362	0.000479	0.000000
690	0.002244	0.000333	0.000000
710	0.002205	0.000000	0.000000
730	0.002004	0.000000	0.000000
750	0.001713	0.000000	0.000000
770	0.001647	0.000000	0.000000
790	0.001394	0.000000	0.000000
810	0.001327	0.000000	0.000000
830	0.001171	0.000000	0.000000
850	0.001020	0.000000	0.000000
870	0.000884	0.000000	0.000000
890	0.000763	0.000000	0.000000
910	0.000664	0.000000	0.000000
930	0.000069	0.000000	0.000000
950	0.000000	0.000000	0.000000

**Table S39.** Volume distribution  $q_3$  for  $\varphi = 30$  vol.-% (Experiment 1).

$\bar{d}_i$ in $\mu\text{m}$	$q_3$ in $\mu\text{m}^{-1}$ for $N = 250$ rpm	$q_3$ in $\mu\text{m}^{-1}$ for $N = 325$ rpm	$q_3$ in $\mu\text{m}^{-1}$ for $N = 400$ rpm
10	0.000000	0.000000	0.000000
30	0.000000	0.000000	0.000001
50	0.000000	0.000001	0.000006
70	0.000002	0.000005	0.000015
90	0.000004	0.000010	0.000032
110	0.000008	0.000018	0.000058
130	0.000012	0.000031	0.000105
150	0.000019	0.000053	0.000187
170	0.000025	0.000085	0.000305
190	0.000037	0.000127	0.000464
210	0.000048	0.000190	0.000688
230	0.000069	0.000261	0.000968
250	0.000090	0.000378	0.001282
270	0.000117	0.000484	0.001635
290	0.000157	0.000643	0.002109
310	0.000196	0.000824	0.002490
330	0.000256	0.001042	0.003065
350	0.000304	0.001254	0.003412
370	0.000402	0.001552	0.003762
390	0.000466	0.001732	0.004020
410	0.000564	0.002064	0.004092
430	0.000667	0.002291	0.003856
450	0.000806	0.002568	0.003832
470	0.000935	0.002800	0.003431
490	0.001046	0.002995	0.003044
510	0.001236	0.003122	0.002580
530	0.001359	0.003321	0.002001
550	0.001589	0.003178	0.001590
570	0.001726	0.003350	0.000970
590	0.001931	0.003003	0.000000
610	0.002062	0.002678	0.000000
630	0.002184	0.002522	0.000000
650	0.002216	0.002190	0.000000
670	0.002313	0.001800	0.000000
690	0.002348	0.001496	0.000000
710	0.002313	0.001260	0.000000
730	0.002372	0.000000	0.000000
750	0.002245	0.000000	0.000000
770	0.002179	0.000000	0.000000
790	0.002124	0.000000	0.000000
810	0.001950	0.000000	0.000000
830	0.001919	0.000000	0.000000
850	0.001657	0.000000	0.000000
870	0.001508	0.000000	0.000000
890	0.001398	0.000000	0.000000
910	0.001228	0.000000	0.000000
930	0.001068	0.000000	0.000000
950	0.001017	0.000000	0.000000

---

$\bar{d}_i$ in $\mu\text{m}$	$q_3$ in $\mu\text{m}^{-1}$ for $N = 250$ rpm	$q_3$ in $\mu\text{m}^{-1}$ for $N = 325$ rpm	$q_3$ in $\mu\text{m}^{-1}$ for $N = 400$ rpm
970	0.000830	0.000000	0.000000
990	0.000674	0.000000	0.000000
1010	0.000324	0.000000	0.000000
1030	0.000000	0.000000	0.000000

---



**Table S40.** Volume distribution  $q_3$  for  $\varphi = 30$  vol.-% (Experiment 2).

$\bar{d}_i$ in $\mu\text{m}$	$q_3$ in $\mu\text{m}^{-1}$ for $N = 250$ rpm	$q_3$ in $\mu\text{m}^{-1}$ for $N = 325$ rpm	$q_3$ in $\mu\text{m}^{-1}$ for $N = 400$ rpm
10	0.000000	0.000000	0.000000
30	0.000000	0.000000	0.000001
50	0.000001	0.000002	0.000006
70	0.000003	0.000004	0.000015
90	0.000005	0.000010	0.000030
110	0.000009	0.000018	0.000059
130	0.000013	0.000031	0.000110
150	0.000022	0.000052	0.000189
170	0.000029	0.000083	0.000313
190	0.000040	0.000128	0.000483
210	0.000056	0.000185	0.000688
230	0.000069	0.000270	0.000960
250	0.000096	0.000373	0.001304
270	0.000128	0.000501	0.001682
290	0.000167	0.000677	0.002056
310	0.000208	0.000841	0.002528
330	0.000266	0.001048	0.002993
350	0.000358	0.001250	0.003503
370	0.000415	0.001469	0.003841
390	0.000497	0.001780	0.003948
410	0.000591	0.002082	0.004137
430	0.000695	0.002368	0.004000
450	0.000801	0.002623	0.003851
470	0.000960	0.002851	0.003493
490	0.001112	0.003095	0.002925
510	0.001279	0.003154	0.002527
530	0.001444	0.003193	0.001873
550	0.001598	0.003232	0.001581
570	0.001625	0.003186	0.000903
590	0.001953	0.002943	0.000000
610	0.002032	0.002778	0.000000
630	0.002150	0.002380	0.000000
650	0.002199	0.002213	0.000000
670	0.002312	0.001832	0.000000
690	0.002385	0.001464	0.000000
710	0.002344	0.001214	0.000000
730	0.002346	0.000670	0.000000
750	0.002211	0.000000	0.000000
770	0.002235	0.000000	0.000000
790	0.002158	0.000000	0.000000
810	0.001968	0.000000	0.000000
830	0.001751	0.000000	0.000000
850	0.001678	0.000000	0.000000
870	0.001376	0.000000	0.000000
890	0.001185	0.000000	0.000000
910	0.001244	0.000000	0.000000
930	0.001044	0.000000	0.000000
950	0.001015	0.000000	0.000000

---

$\bar{d}_i$ in $\mu\text{m}$	$q_3$ in $\mu\text{m}^{-1}$ for $N = 250$ rpm	$q_3$ in $\mu\text{m}^{-1}$ for $N = 325$ rpm	$q_3$ in $\mu\text{m}^{-1}$ for $N = 400$ rpm
970	0.000787	0.000000	0.000000
990	0.000684	0.000000	0.000000
1010	0.000455	0.000000	0.000000
1030	0.000000	0.000000	0.000000

---

**Table S41.** Volume distribution  $q_3$  for  $\varphi = 35$  vol.-% (Experiment 1).

$\bar{d}_i$ in $\mu\text{m}$	$q_3$ in $\mu\text{m}^{-1}$ for $N = 250$ rpm	$q_3$ in $\mu\text{m}^{-1}$ for $N = 325$ rpm	$q_3$ in $\mu\text{m}^{-1}$ for $N = 400$ rpm
10	0.000000	0.000000	0.000000
30	0.000000	0.000000	0.000001
50	0.000001	0.000002	0.000007
70	0.000003	0.000004	0.000013
90	0.000005	0.000008	0.000025
110	0.000006	0.000013	0.000055
130	0.000009	0.000021	0.000108
150	0.000014	0.000041	0.000210
170	0.000019	0.000073	0.000370
190	0.000028	0.000129	0.000649
210	0.000041	0.000200	0.000959
230	0.000072	0.000331	0.001374
250	0.000097	0.000503	0.001869
270	0.000141	0.000685	0.002497
290	0.000199	0.000976	0.003139
310	0.000274	0.001225	0.003668
330	0.000352	0.001521	0.004035
350	0.000441	0.001807	0.004086
370	0.000504	0.002189	0.004241
390	0.000636	0.002544	0.004033
410	0.000716	0.002737	0.003836
430	0.000868	0.002905	0.003611
450	0.000988	0.003207	0.003168
470	0.001061	0.003184	0.002622
490	0.001276	0.003225	0.001971
510	0.001463	0.003031	0.001462
530	0.001549	0.003112	0.001145
550	0.001741	0.002770	0.000845
570	0.001897	0.002675	0.000000
590	0.002057	0.002254	0.000000
610	0.002040	0.001974	0.000000
630	0.002199	0.001579	0.000000
650	0.002308	0.001466	0.000000
670	0.002354	0.001227	0.000000
690	0.002260	0.000877	0.000000
710	0.002326	0.000748	0.000000
730	0.002283	0.000551	0.000000
750	0.001965	0.000210	0.000000
770	0.001970	0.000000	0.000000
790	0.001737	0.000000	0.000000
810	0.001536	0.000000	0.000000
830	0.001541	0.000000	0.000000
850	0.001289	0.000000	0.000000
870	0.001115	0.000000	0.000000
890	0.001074	0.000000	0.000000
910	0.000911	0.000000	0.000000
930	0.000765	0.000000	0.000000
950	0.000623	0.000000	0.000000

$\bar{d}_i$ in $\mu\text{m}$	$q_3$ in $\mu\text{m}^{-1}$ for $N = 250$ rpm	$q_3$ in $\mu\text{m}^{-1}$ for $N = 325$ rpm	$q_3$ in $\mu\text{m}^{-1}$ for $N = 400$ rpm
970	0.000643	0.000000	0.000000
990	0.000531	0.000000	0.000000
1010	0.000483	0.000000	0.000000
1030	0.000317	0.000000	0.000000
1050	0.000297	0.000000	0.000000
1070	0.000410	0.000000	0.000000
1090	0.000231	0.000000	0.000000
1110	0.000335	0.000000	0.000000
1130	0.000000	0.000000	0.000000

**Table S42.** Volume distribution  $q_3$  for  $\varphi = 35$  vol.-% (Experiment 2).

$\bar{d}_i$ in $\mu\text{m}$	$q_3$ in $\mu\text{m}^{-1}$ for $N = 250$ rpm	$q_3$ in $\mu\text{m}^{-1}$ for $N = 325$ rpm	$q_3$ in $\mu\text{m}^{-1}$ for $N = 400$ rpm
10	0.000000	0.000000	0.000000
30	0.000000	0.000000	0.000001
50	0.000001	0.000002	0.000005
70	0.000002	0.000004	0.000010
90	0.000004	0.000008	0.000020
110	0.000006	0.000012	0.000042
130	0.000009	0.000020	0.000087
150	0.000012	0.000037	0.000173
170	0.000021	0.000073	0.000310
190	0.000031	0.000129	0.000537
210	0.000048	0.000221	0.000842
230	0.000070	0.000333	0.001230
250	0.000103	0.000517	0.001742
270	0.000149	0.000741	0.002213
290	0.000210	0.000979	0.002812
310	0.000290	0.001248	0.003310
330	0.000381	0.001574	0.003797
350	0.000468	0.001914	0.004165
370	0.000509	0.002275	0.004330
390	0.000731	0.002392	0.004346
410	0.000755	0.002794	0.004113
430	0.000923	0.003033	0.003806
450	0.000986	0.002938	0.003349
470	0.001236	0.003238	0.002792
490	0.001285	0.003296	0.002298
510	0.001568	0.003354	0.001725
530	0.001620	0.003019	0.001391
550	0.001779	0.002868	0.000553
570	0.002025	0.002577	0.000000
590	0.002125	0.002179	0.000000
610	0.002262	0.002084	0.000000
630	0.002215	0.001681	0.000000
650	0.002340	0.001470	0.000000
670	0.002367	0.001064	0.000000
690	0.002370	0.000843	0.000000
710	0.002286	0.000657	0.000000
730	0.002178	0.000426	0.000000
750	0.001911	0.000000	0.000000
770	0.001875	0.000000	0.000000
790	0.001607	0.000000	0.000000
810	0.001691	0.000000	0.000000
830	0.001390	0.000000	0.000000
850	0.001231	0.000000	0.000000
870	0.001126	0.000000	0.000000
890	0.001078	0.000000	0.000000
910	0.000753	0.000000	0.000000
930	0.000743	0.000000	0.000000
950	0.000670	0.000000	0.000000

$\bar{d}_i$ in $\mu\text{m}$	$q_3$ in $\mu\text{m}^{-1}$ for $N = 250$ rpm	$q_3$ in $\mu\text{m}^{-1}$ for $N = 325$ rpm	$q_3$ in $\mu\text{m}^{-1}$ for $N = 400$ rpm
970	0.000541	0.000000	0.000000
990	0.000529	0.000000	0.000000
1010	0.000494	0.000000	0.000000
1030	0.000329	0.000000	0.000000
1050	0.000380	0.000000	0.000000
1070	0.000287	0.000000	0.000000
1090	0.000000	0.000000	0.000000

**Table S43.** Volume distribution  $q_3$  for  $\varphi = 40$  vol.-% (Experiment 1).

$\bar{d}_i$ in $\mu\text{m}$	$q_3$ in $\mu\text{m}^{-1}$ for $N = 250$ rpm	$q_3$ in $\mu\text{m}^{-1}$ for $N = 325$ rpm	$q_3$ in $\mu\text{m}^{-1}$ for $N = 400$ rpm
10	0.000000	0.000000	0.000000
30	0.000000	0.000000	0.000001
50	0.000001	0.000001	0.000004
70	0.000001	0.000002	0.000007
90	0.000002	0.000004	0.000014
110	0.000004	0.000007	0.000028
130	0.000005	0.000013	0.000056
150	0.000009	0.000026	0.000123
170	0.000014	0.000054	0.000240
190	0.000025	0.000101	0.000431
210	0.000031	0.000191	0.000733
230	0.000055	0.000300	0.001141
250	0.000074	0.000477	0.001674
270	0.000113	0.000699	0.002240
290	0.000159	0.000950	0.002964
310	0.000200	0.001241	0.003500
330	0.000268	0.001602	0.004076
350	0.000335	0.001910	0.004377
370	0.000408	0.002313	0.004524
390	0.000508	0.002744	0.004498
410	0.000565	0.003116	0.004239
430	0.000698	0.003593	0.003853
450	0.000787	0.003732	0.003296
470	0.000898	0.003834	0.002657
490	0.000991	0.003786	0.002056
510	0.001202	0.003671	0.001594
530	0.001164	0.003318	0.001122
550	0.001390	0.003061	0.000553
570	0.001499	0.002522	0.000000
590	0.001778	0.002144	0.000000
610	0.001819	0.001732	0.000000
630	0.001843	0.001373	0.000000
650	0.001976	0.001026	0.000000
670	0.002101	0.000457	0.000000
690	0.002180	0.000000	0.000000
710	0.002097	0.000000	0.000000
730	0.001956	0.000000	0.000000
750	0.002115	0.000000	0.000000
770	0.002036	0.000000	0.000000
790	0.001873	0.000000	0.000000
810	0.001854	0.000000	0.000000
830	0.001656	0.000000	0.000000
850	0.001509	0.000000	0.000000
870	0.001466	0.000000	0.000000
890	0.001091	0.000000	0.000000
910	0.001223	0.000000	0.000000
930	0.000954	0.000000	0.000000
950	0.000709	0.000000	0.000000

$\bar{d}_i$ in $\mu\text{m}$	$q_3$ in $\mu\text{m}^{-1}$ for $N = 250$ rpm	$q_3$ in $\mu\text{m}^{-1}$ for $N = 325$ rpm	$q_3$ in $\mu\text{m}^{-1}$ for $N = 400$ rpm
970	0.000784	0.000000	0.000000
990	0.000770	0.000000	0.000000
1010	0.000593	0.000000	0.000000
1030	0.000510	0.000000	0.000000
1050	0.000515	0.000000	0.000000
1070	0.000385	0.000000	0.000000
1090	0.000337	0.000000	0.000000
1110	0.000326	0.000000	0.000000
1130	0.000281	0.000000	0.000000
1150	0.000395	0.000000	0.000000
1170	0.000312	0.000000	0.000000
1190	0.000164	0.000000	0.000000
1210	0.000191	0.000000	0.000000
1230	0.000201	0.000000	0.000000
1250	0.000253	0.000000	0.000000
1270	0.000177	0.000000	0.000000
1290	0.000162	0.000000	0.000000
1310	0.000000	0.000000	0.000000



**Table S44.** Volume distribution  $q_3$  for  $\varphi = 40$  vol.-% (Experiment 2).

$\bar{d}_i$ in $\mu\text{m}$	$q_3$ in $\mu\text{m}^{-1}$ for $N = 250$ rpm	$q_3$ in $\mu\text{m}^{-1}$ for $N = 325$ rpm	$q_3$ in $\mu\text{m}^{-1}$ for $N = 400$ rpm
10	0.000000	0.000000	0.000000
30	0.000000	0.000000	0.000001
50	0.000000	0.000001	0.000003
70	0.000001	0.000002	0.000007
90	0.000002	0.000004	0.000015
110	0.000004	0.000007	0.000029
130	0.000007	0.000013	0.000059
150	0.000009	0.000028	0.000116
170	0.000014	0.000053	0.000239
190	0.000023	0.000107	0.000442
210	0.000035	0.000185	0.000742
230	0.000052	0.000301	0.001137
250	0.000071	0.000482	0.001604
270	0.000109	0.000674	0.002203
290	0.000162	0.000953	0.002887
310	0.000182	0.001249	0.003430
330	0.000262	0.001589	0.004109
350	0.000340	0.001940	0.004608
370	0.000431	0.002333	0.004820
390	0.000499	0.002696	0.004817
410	0.000552	0.003160	0.004630
430	0.000699	0.003449	0.003986
450	0.000761	0.003748	0.003218
470	0.000915	0.003947	0.002726
490	0.001018	0.003839	0.002013
510	0.001089	0.003647	0.001381
530	0.001323	0.003312	0.000778
550	0.001389	0.003024	0.000000
570	0.001549	0.002625	0.000000
590	0.001675	0.002172	0.000000
610	0.001865	0.001786	0.000000
630	0.001907	0.001274	0.000000
650	0.002039	0.000964	0.000000
670	0.002071	0.000436	0.000000
690	0.002236	0.000000	0.000000
710	0.002221	0.000000	0.000000
730	0.002151	0.000000	0.000000
750	0.002280	0.000000	0.000000
770	0.001945	0.000000	0.000000
790	0.001902	0.000000	0.000000
810	0.001916	0.000000	0.000000
830	0.001764	0.000000	0.000000
850	0.001661	0.000000	0.000000
870	0.001433	0.000000	0.000000
890	0.001246	0.000000	0.000000
910	0.000919	0.000000	0.000000
930	0.000973	0.000000	0.000000
950	0.000892	0.000000	0.000000

$\bar{d}_i$ in $\mu\text{m}$	$q_3$ in $\mu\text{m}^{-1}$ for $N = 250$ rpm	$q_3$ in $\mu\text{m}^{-1}$ for $N = 325$ rpm	$q_3$ in $\mu\text{m}^{-1}$ for $N = 400$ rpm
970	0.000876	0.000000	0.000000
990	0.000720	0.000000	0.000000
1010	0.000530	0.000000	0.000000
1030	0.000454	0.000000	0.000000
1050	0.000389	0.000000	0.000000
1070	0.000472	0.000000	0.000000
1090	0.000575	0.000000	0.000000
1110	0.000337	0.000000	0.000000
1130	0.000427	0.000000	0.000000
1150	0.000300	0.000000	0.000000
1170	0.000126	0.000000	0.000000
1190	0.000116	0.000000	0.000000
1210	0.000087	0.000000	0.000000
1230	0.000000	0.000000	0.000000

**Table S45.** Volume distribution  $q_3$  for  $\varphi = 45$  vol.-% (Experiment 1).

$\bar{d}_i$ in $\mu\text{m}$	$q_3$ in $\mu\text{m}^{-1}$ for $N = 250$ rpm	$q_3$ in $\mu\text{m}^{-1}$ for $N = 325$ rpm	$q_3$ in $\mu\text{m}^{-1}$ for $N = 400$ rpm
10	0.000000	0.000000	0.000000
30	0.000000	0.000000	0.000000
50	0.000000	0.000000	0.000002
70	0.000001	0.000001	0.000004
90	0.000002	0.000002	0.000008
110	0.000002	0.000003	0.000015
130	0.000003	0.000007	0.000030
150	0.000005	0.000014	0.000064
170	0.000007	0.000030	0.000136
190	0.000011	0.000053	0.000248
210	0.000017	0.000102	0.000409
230	0.000024	0.000171	0.000662
250	0.000045	0.000264	0.000987
270	0.000061	0.000396	0.001363
290	0.000086	0.000560	0.001973
310	0.000122	0.000748	0.002593
330	0.000164	0.001024	0.003324
350	0.000219	0.001375	0.003923
370	0.000263	0.001769	0.004443
390	0.000342	0.002205	0.004791
410	0.000396	0.002617	0.004747
430	0.000463	0.003015	0.004362
450	0.000512	0.003305	0.003879
470	0.000621	0.003606	0.003362
490	0.000708	0.003671	0.002687
510	0.000818	0.003603	0.002244
530	0.000892	0.003498	0.001543
550	0.001011	0.003227	0.001158
570	0.001171	0.002958	0.000794
590	0.001310	0.002617	0.000247
610	0.001388	0.002313	0.000000
630	0.001559	0.001877	0.000000
650	0.001702	0.001579	0.000000
670	0.001738	0.001314	0.000000
690	0.001805	0.000985	0.000000
710	0.001916	0.000796	0.000000
730	0.001992	0.000294	0.000000
750	0.002131	0.000000	0.000000
770	0.002294	0.000000	0.000000
790	0.002123	0.000000	0.000000
810	0.002024	0.000000	0.000000
830	0.001821	0.000000	0.000000
850	0.001803	0.000000	0.000000
870	0.001918	0.000000	0.000000
890	0.001844	0.000000	0.000000
910	0.001509	0.000000	0.000000
930	0.001423	0.000000	0.000000
950	0.001215	0.000000	0.000000

$\bar{d}_i$ in $\mu\text{m}$	$q_3$ in $\mu\text{m}^{-1}$ for $N = 250$ rpm	$q_3$ in $\mu\text{m}^{-1}$ for $N = 325$ rpm	$q_3$ in $\mu\text{m}^{-1}$ for $N = 400$ rpm
970	0.001037	0.000000	0.000000
990	0.000768	0.000000	0.000000
1010	0.000794	0.000000	0.000000
1030	0.000635	0.000000	0.000000
1050	0.000640	0.000000	0.000000
1070	0.000462	0.000000	0.000000
1090	0.000452	0.000000	0.000000
1110	0.000401	0.000000	0.000000
1130	0.000232	0.000000	0.000000
1150	0.000361	0.000000	0.000000
1170	0.000290	0.000000	0.000000
1190	0.000235	0.000000	0.000000
1210	0.000284	0.000000	0.000000
1230	0.000194	0.000000	0.000000
1250	0.000163	0.000000	0.000000
1270	0.000200	0.000000	0.000000
1290	0.000119	0.000000	0.000000
1310	0.000281	0.000000	0.000000
1330	0.000229	0.000000	0.000000
1350	0.000086	0.000000	0.000000
1370	0.000250	0.000000	0.000000
1390	0.000168	0.000000	0.000000
1410	0.000117	0.000000	0.000000
1430	0.000101	0.000000	0.000000
1450	0.000021	0.000000	0.000000
1470	0.000000	0.000000	0.000000

**Table S46.** Volume distribution  $q_3$  for  $\varphi = 45$  vol.-% (Experiment 2).

$\bar{d}_i$ in $\mu\text{m}$	$q_3$ in $\mu\text{m}^{-1}$ for $N = 250$ rpm	$q_3$ in $\mu\text{m}^{-1}$ for $N = 325$ rpm	$q_3$ in $\mu\text{m}^{-1}$ for $N = 400$ rpm
10	0.000000	0.000000	0.000000
30	0.000000	0.000000	0.000000
50	0.000000	0.000000	0.000002
70	0.000001	0.000001	0.000004
90	0.000001	0.000002	0.000009
110	0.000002	0.000004	0.000017
130	0.000003	0.000007	0.000033
150	0.000004	0.000015	0.000068
170	0.000008	0.000029	0.000145
190	0.000013	0.000055	0.000266
210	0.000017	0.000104	0.000425
230	0.000030	0.000169	0.000682
250	0.000044	0.000274	0.001041
270	0.000064	0.000410	0.001509
290	0.000096	0.000580	0.002114
310	0.000138	0.000770	0.002814
330	0.000174	0.001075	0.003560
350	0.000210	0.001416	0.004243
370	0.000259	0.001807	0.004671
390	0.000347	0.002264	0.004860
410	0.000398	0.002677	0.004774
430	0.000472	0.003051	0.004429
450	0.000561	0.003381	0.003827
470	0.000669	0.003583	0.003262
490	0.000682	0.003649	0.002589
510	0.000820	0.003637	0.001920
530	0.000989	0.003434	0.001385
550	0.001032	0.003272	0.000966
570	0.001159	0.002952	0.000383
590	0.001331	0.002620	0.000000
610	0.001414	0.002310	0.000000
630	0.001468	0.001859	0.000000
650	0.001612	0.001558	0.000000
670	0.001602	0.001259	0.000000
690	0.001789	0.001021	0.000000
710	0.001821	0.000730	0.000000
730	0.001942	0.000022	0.000000
750	0.001977	0.000000	0.000000
770	0.002061	0.000000	0.000000
790	0.002002	0.000000	0.000000
810	0.002009	0.000000	0.000000
830	0.002036	0.000000	0.000000
850	0.001790	0.000000	0.000000
870	0.001470	0.000000	0.000000
890	0.001583	0.000000	0.000000
910	0.001354	0.000000	0.000000
930	0.001253	0.000000	0.000000
950	0.001181	0.000000	0.000000

$\bar{d}_i$ in $\mu\text{m}$	$q_3$ in $\mu\text{m}^{-1}$ for $N = 250$ rpm	$q_3$ in $\mu\text{m}^{-1}$ for $N = 325$ rpm	$q_3$ in $\mu\text{m}^{-1}$ for $N = 400$ rpm
970	0.000863	0.000000	0.000000
990	0.000794	0.000000	0.000000
1010	0.000819	0.000000	0.000000
1030	0.000560	0.000000	0.000000
1050	0.000593	0.000000	0.000000
1070	0.000709	0.000000	0.000000
1090	0.000355	0.000000	0.000000
1110	0.000355	0.000000	0.000000
1130	0.000342	0.000000	0.000000
1150	0.000293	0.000000	0.000000
1170	0.000213	0.000000	0.000000
1190	0.000237	0.000000	0.000000
1210	0.000223	0.000000	0.000000
1230	0.000220	0.000000	0.000000
1250	0.000231	0.000000	0.000000
1270	0.000288	0.000000	0.000000
1290	0.000127	0.000000	0.000000
1310	0.000083	0.000000	0.000000
1330	0.000260	0.000000	0.000000
1350	0.000109	0.000000	0.000000
1370	0.000133	0.000000	0.000000
1390	0.000139	0.000000	0.000000
1410	0.000186	0.000000	0.000000
1430	0.000129	0.000000	0.000000
1450	0.000157	0.000000	0.000000
1470	0.000094	0.000000	0.000000
1490	0.000146	0.000000	0.000000
1510	0.000177	0.000000	0.000000
1530	0.000290	0.000000	0.000000
1550	0.000192	0.000000	0.000000
1570	0.000285	0.000000	0.000000
1590	0.000266	0.000000	0.000000
1610	0.000245	0.000000	0.000000
1630	0.000000	0.000000	0.000000

**Table S47.** Volume distribution  $q_3$  for  $\varphi = 50$  vol.-% (Experiment 1).

$\bar{d}_i$ in $\mu\text{m}$	$q_3$ in $\mu\text{m}^{-1}$ for $N = 250$ rpm	$q_3$ in $\mu\text{m}^{-1}$ for $N = 325$ rpm	$q_3$ in $\mu\text{m}^{-1}$ for $N = 400$ rpm
10	0.000000	0.000000	0.000000
30	0.000000	0.000000	0.000001
50	0.000000	0.000001	0.000003
70	0.000000	0.000001	0.000004
90	0.000000	0.000002	0.000005
110	0.000001	0.000003	0.000011
130	0.000001	0.000005	0.000017
150	0.000002	0.000010	0.000041
170	0.000003	0.000018	0.000088
190	0.000005	0.000038	0.000178
210	0.000009	0.000073	0.000328
230	0.000015	0.000121	0.000490
250	0.000023	0.000202	0.000847
270	0.000038	0.000289	0.001237
290	0.000057	0.000456	0.001803
310	0.000084	0.000691	0.002648
330	0.000109	0.000973	0.003301
350	0.000162	0.001361	0.004230
370	0.000225	0.001833	0.004472
390	0.000284	0.002352	0.004685
410	0.000367	0.002801	0.004628
430	0.000486	0.003198	0.004189
450	0.000602	0.003630	0.003960
470	0.000766	0.003797	0.003382
490	0.000909	0.003802	0.002777
510	0.001125	0.003752	0.002097
530	0.001315	0.003507	0.001513
550	0.001465	0.003230	0.001019
570	0.001697	0.002816	0.000621
590	0.001917	0.002467	0.000566
610	0.002047	0.002188	0.000327
630	0.002177	0.001778	0.000442
650	0.002360	0.001418	0.000090
670	0.002416	0.001163	0.000000
690	0.002287	0.000833	0.000000
710	0.002489	0.000627	0.000000
730	0.002450	0.000514	0.000000
750	0.002346	0.000050	0.000000
770	0.002158	0.000000	0.000000
790	0.002076	0.000000	0.000000
810	0.002032	0.000000	0.000000
830	0.001935	0.000000	0.000000
850	0.001757	0.000000	0.000000
870	0.001604	0.000000	0.000000
890	0.001294	0.000000	0.000000
910	0.001245	0.000000	0.000000
930	0.001151	0.000000	0.000000
950	0.000934	0.000000	0.000000

$\bar{d}_i$ in $\mu\text{m}$	$q_3$ in $\mu\text{m}^{-1}$ for $N = 250$ rpm	$q_3$ in $\mu\text{m}^{-1}$ for $N = 325$ rpm	$q_3$ in $\mu\text{m}^{-1}$ for $N = 400$ rpm
970	0.000760	0.000000	0.000000
990	0.000661	0.000000	0.000000
1010	0.000651	0.000000	0.000000
1030	0.000511	0.000000	0.000000
1050	0.000400	0.000000	0.000000
1070	0.000405	0.000000	0.000000
1090	0.000188	0.000000	0.000000
1110	0.000000	0.000000	0.000000



**Table S48.** Volume distribution  $q_3$  for  $\varphi = 50$  vol.-% (Experiment 2).

$\bar{d}_i$ in $\mu\text{m}$	$q_3$ in $\mu\text{m}^{-1}$ for $N = 250$ rpm	$q_3$ in $\mu\text{m}^{-1}$ for $N = 325$ rpm	$q_3$ in $\mu\text{m}^{-1}$ for $N = 400$ rpm
10	0.000000	0.000000	0.000000
30	0.000000	0.000000	0.000000
50	0.000000	0.000001	0.000003
70	0.000000	0.000001	0.000004
90	0.000001	0.000002	0.000006
110	0.000001	0.000004	0.000012
130	0.000001	0.000007	0.000022
150	0.000002	0.000012	0.000044
170	0.000002	0.000021	0.000095
190	0.000005	0.000043	0.000185
210	0.000008	0.000076	0.000311
230	0.000014	0.000131	0.000521
250	0.000022	0.000211	0.000835
270	0.000035	0.000329	0.001338
290	0.000055	0.000504	0.002004
310	0.000073	0.000762	0.002720
330	0.000103	0.001070	0.003596
350	0.000138	0.001514	0.004266
370	0.000188	0.001987	0.004761
390	0.000229	0.002560	0.004776
410	0.000278	0.003050	0.004611
430	0.000381	0.003499	0.004425
450	0.000459	0.003782	0.003688
470	0.000575	0.003846	0.003281
490	0.000687	0.003802	0.002567
510	0.000824	0.003709	0.001910
530	0.001039	0.003444	0.001438
550	0.001241	0.003125	0.000937
570	0.001373	0.002688	0.000838
590	0.001634	0.002379	0.000628
610	0.001885	0.001992	0.000179
630	0.002102	0.001676	0.000000
650	0.002143	0.001368	0.000000
670	0.002378	0.000952	0.000000
690	0.002376	0.000762	0.000000
710	0.002448	0.000596	0.000000
730	0.002498	0.000093	0.000000
750	0.002453	0.000000	0.000000
770	0.002434	0.000000	0.000000
790	0.002315	0.000000	0.000000
810	0.002060	0.000000	0.000000
830	0.001852	0.000000	0.000000
850	0.001953	0.000000	0.000000
870	0.001628	0.000000	0.000000
890	0.001509	0.000000	0.000000
910	0.001088	0.000000	0.000000
930	0.001101	0.000000	0.000000
950	0.000870	0.000000	0.000000

$\bar{d}_i$ in $\mu\text{m}$	$q_3$ in $\mu\text{m}^{-1}$ for $N = 250$ rpm	$q_3$ in $\mu\text{m}^{-1}$ for $N = 325$ rpm	$q_3$ in $\mu\text{m}^{-1}$ for $N = 400$ rpm
970	0.000744	0.000000	0.000000
990	0.000715	0.000000	0.000000
1010	0.000590	0.000000	0.000000
1030	0.000546	0.000000	0.000000
1050	0.000423	0.000000	0.000000
1070	0.000448	0.000000	0.000000
1090	0.000200	0.000000	0.000000
1110	0.000206	0.000000	0.000000
1130	0.000242	0.000000	0.000000
1150	0.000229	0.000000	0.000000
1170	0.000213	0.000000	0.000000
1190	0.000137	0.000000	0.000000
1210	0.000106	0.000000	0.000000
1230	0.000128	0.000000	0.000000
1250	0.000142	0.000000	0.000000
1270	0.000140	0.000000	0.000000
1290	0.000184	0.000000	0.000000
1310	0.000106	0.000000	0.000000
1330	0.000040	0.000000	0.000000
1350	0.000000	0.000000	0.000000