Supporting Information

Process study of the formation of biodegradable polymer microspheres for tissue engineering

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Tables S1-S4 present the experimental values of microsphere diameters d_{43} and d_{32} as obtained by laser diffraction measurements for all tests performed in this work.

Table S1. Experimental values of d_{43} and d_{32} microsphere diameters as a function of viscosity ratio between dispersed and continuous phase μ_d/μ_c. Volume ratio between dispersed and continuous phase H and impeller dissipated power P/V were maintained constant and equal to 0.08 and 13892 W/m^3 respectively.

Viscosity ratio μ_d/μ_c [-]	**d_{43} [μm]**	**d_{32} [μm]**
5.07	133.57	30.39
9.94	145.39	33.22
15.44	163.24	39.62
36.15	263.82	64.13
95.70	443.33	79.47

Table S2. Experimental values of d_{43} and d_{32} microsphere diameters as a function of volume ratio between dispersed and continuous phase H. Viscosity ratio μ_d/μ_c and impeller dissipated power P/V were maintained constant and equal to 15.44 and 13892 W/m^3 respectively.

Volume ratio H [-]	**d_{43} [μm]**	**d_{32} [μm]**
0.06	184.23	41.41
0.07	174.42	39.81
0.08	163.47	39.57
0.09	175.82	41.29
0.10	200.35	44.04

Table S3. Experimental values of d_{43} and d_{32} microsphere diameters as a function of impeller dissipated power P/V. Volume ratio H and viscosity ratio μ_d/μ_c were maintained constant and equal to 0.08 and 15.44 respectively.

Impeller dissipated power P/V [W/m^3]	d_{43} [μm]	d_{32} [μm]
4116	184.70	53.86
8271	173.25	42.31
10289	170.13	40.58
13892	163.43	39.92

Table S4. Experimental values of d_{43} and d_{32} microsphere diameters as a function of Weber number We. Volume ratio H and viscosity ratio μ_d/μ_c were maintained constant and equal to 0.08 and 15.44 respectively.

Weber number We [-]	d_{43} [μm]	d_{32} [μm]
706	184.70	53.86
1124	173.25	42.31
1300	170.13	40.58
1588	163.43	39.92

Table S5. Linear regression parameters employed in this work for the calculation of the relationships between microsphere size (d_{43}, d_{32} and d_{eq}) and varying process parameters from double-log plots. The fitting equation is in all cases $y = ax + b$. The adjusted determination coefficient (*Adj* R^2) is also shown for each *a* value.

Process parameter *(x)*	$a \pm SE$ (*Adj* R^2)		
	y = Log(d_{43})	y = Log(d_{32})	y = Log(d_{eq})
Log(μd/μc)	0.43 ± 0.06 (0.94)	0.36 ± 0.04 (0.95)	0.25 ± 0.04 (0.91)
Log(H)	0.91 ± 0.18 (0.93)	0.48 ± 0.07 (0.96)	0.48 ± 0.07 (0.95)
Log(P/V)	- 0.10 ± 0.01 (0.99)	- 0.26 ± 0.05 (0.90)	- 0.26 ± 0.05 (0.90)
Log(We)	- 0.15 ± 0.01 (0.99)	0.39 ± 0.07 (0.90)	0.39 ± 0.07 (0.90)