

Supplementary information

Performance of a helical insert in commercial tubing as a passive micromixer to produce nanoparticles by an emulsification approach

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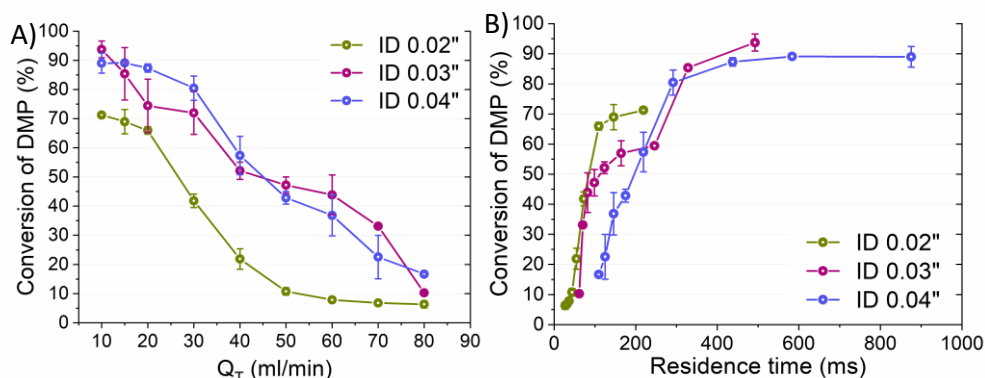


Figure S1.- A) Conversion of DMP over the total volume flow rate (ml/min) without insert for tubings of ID 0.02", 0.03" and 0.04". B) Comparison of DMP conversion for the different tubings without inserts versus the residence times (ms).

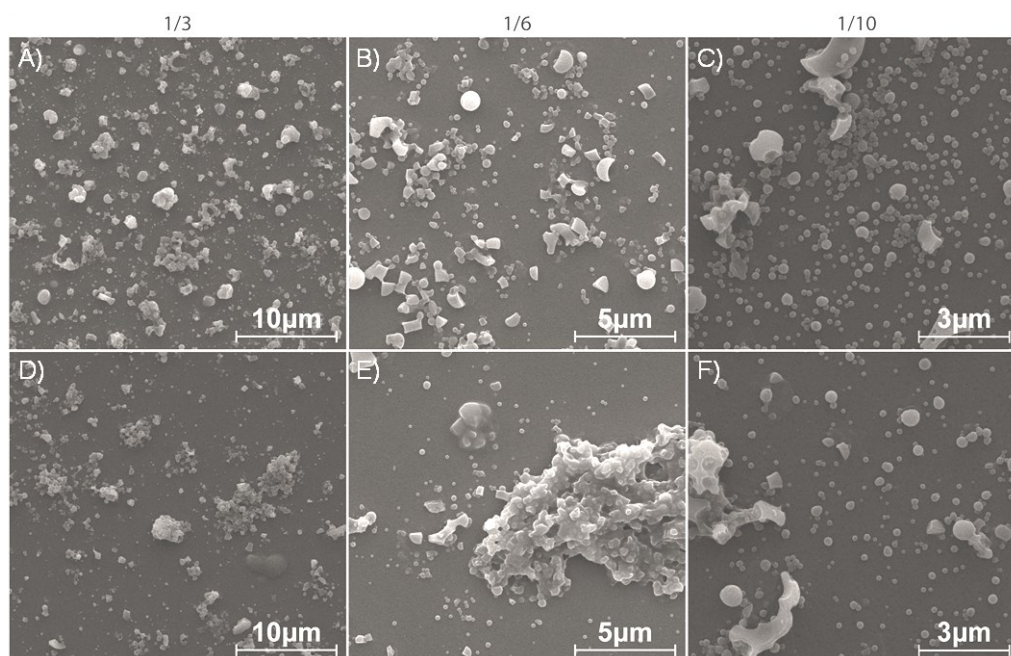


Figure S2. Representative SEM images of polymeric NPs synthesized by O/W emulsification, with a 0.04" (id) insert in the system (A,B,C) and without an insert (D,E,F), at different flow ratios: A,D) $Q_O/Q_A=1/3$, $Q_O=12$ ml/min, $Q_A=36$ ml/min. B,E) $Q_O/Q_A=1/6$, $Q_O=6.85$ ml/min, $Q_A=41.14$ ml/min. C,F) $Q_O/Q_A=1/10$, $Q_O=4.36$ ml/min, $Q_A=46.63$ ml/min. Q_T was maintained 48 ml/min across all conditions.

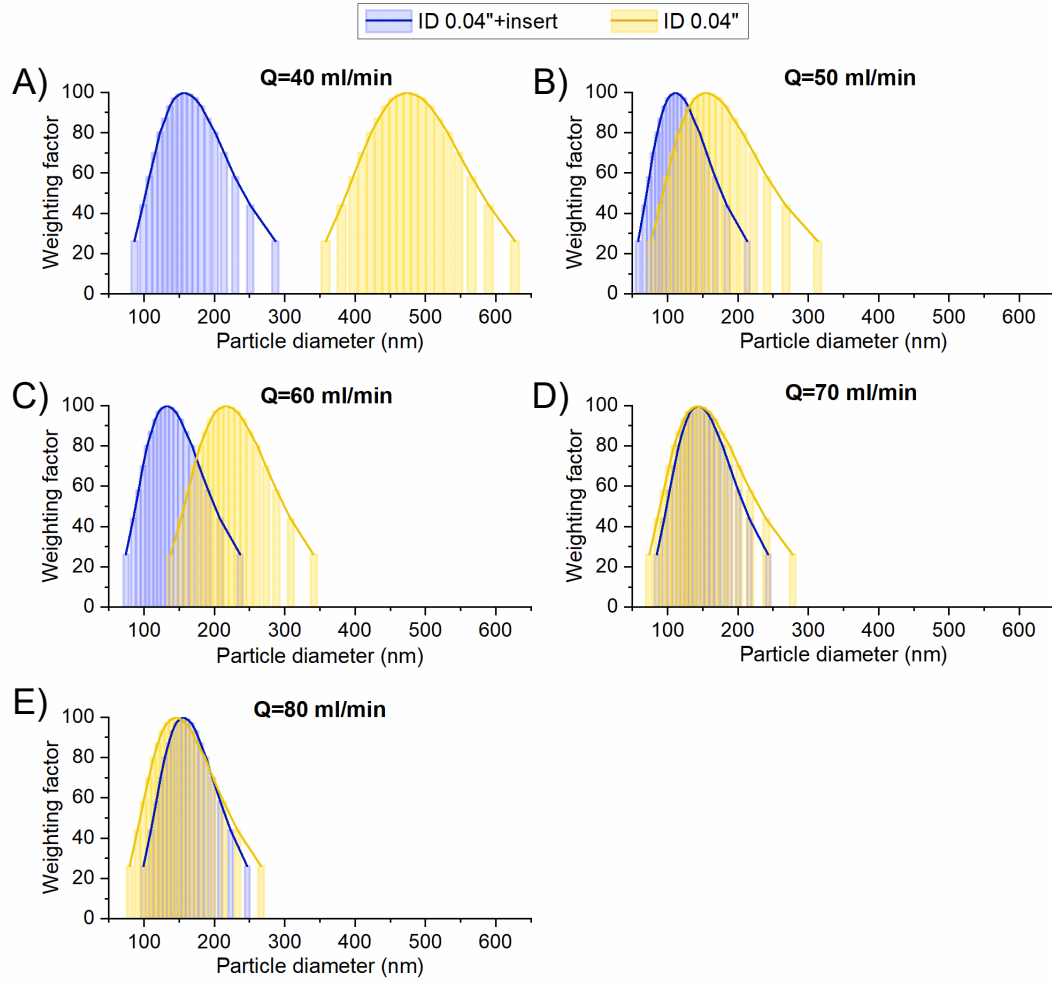


Figure S3. Dynamic light scattering particle size histograms of PLGA/Eudragit NPs synthesized by o/w emulsification with and without an insert in a 0.04" tubing (referred to as ID 0.04" + insert and ID 0.04", respectively), under different Q_T : 40ml/min (A), 50ml/min (B), 60ml/min (C), 70ml/min (D) and 80ml/min (E). In all conditions, the Q_O/Q_A ratio is 1/12. Data are plotted according to a number-weighted distribution fitted to lognormal.