

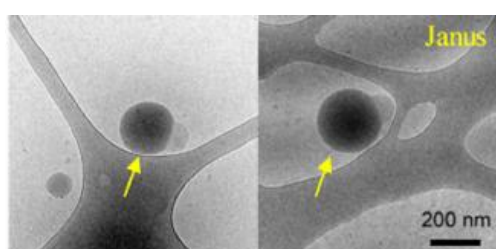
## One-step elaboration of charged Janus polymeric nanoparticles

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Particles having biphasic geometry of various chemistries, composition or functionalities are called “Janus particles”[1] and are very useful in a wide range of application.[2,3] This type of particles is generally obtained after several steps, sometimes needing hard chemical solvents and leading to the elaboration of emulsions with large and multi-modal sizes distributions. We propose here, for the first time, to extend the emulsification-evaporation method to the one-step production of polymeric Janus nanoparticles (JNPs) and to compare several processes (sonication, shear mixing and elongational-flow micromixing). The aforementioned processes and physical-chemistry parameters highly influenced the JNPs size and morphology. The possibility to obtain monomodal JNPs with a diameter lower than 200 nm, with a hydrophobic domain of poly(lactic-co-glycolic acid) and a hydrophilic charged domain based on poly(styrene sulfonate) was demonstrated with the elongational-flow micromixer.



**Figure 1.** Cryo-TEM images of PSS/PLGA nanosuspensions obtained with elongational-flow micromixer.[3]

### References:

- [1] E. Poggi *et al.* *RSC Adv.* **2017**, 7, 37048–37054.
- [2] P. Yáñez-Sedeño *et al.*, *Appl. Mater. Today.* **2017**, 9, 276–288.
- [3] M. Vauthier M. Schmutz, C.A. Serra, *Coll. Interf. A.* **2021**, 626, 127059

