

## FINE TUNING OF SIZE AND POLYDISPERSITY OF HOLLOW CARBON SPHERES

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Due to their morphology, low density and high surface area hollow carbon spheres have attracted much attention in several fields for applications in catalysts, energy storage-media, or drug delivery. Furthermore, their use as building blocks to produce high ordered structures is also an appealing feature in photonics. [1, 2]

In this work the optimized conditions for the preparation of hollow carbon spheres have been studied by means of a 2-step method. This method involves the use of polystyrene beads as seeds and glucose as precursor in a hydrothermal treatment [3] followed by further carbonization at high temperatures. [4] The concentration of polystyrene beads, size, polystyrene/glucose ratio, hydrothermal and carbonization temperatures as well as reaction time allow for a fine tuning of the size (100-1000 nm) and monodispersity (<4%) of the final carbon shell structures. Figure 1a show a SEM image of carbon spheres produced with initial 260 nm polystyrene beads as seeds where broken spheres evidence the empty cores (Figure 1b).

### References

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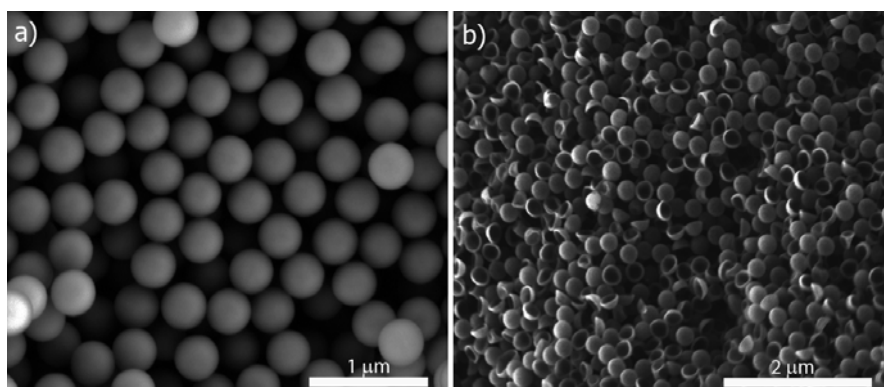


Figure 1a) Hollow carbon spheres obtained from polystyrene beads as seeds. b) Broken spheres evidencing empty cores.