Bimetallic nanoparticles are characterized by a high catalytic activity that is attributable to the synergistic effect between the two metals that are involved\textsuperscript{1,2}. Amongst other bimetallic particles, core-shell catalysts are particularly efficient because the electron charge transfer in the over layer is enhanced due to their specific architecture\textsuperscript{3,4}. However, the control of the composition, the size and the shape of these core-shell nanoparticles remains challenging. Here, we propose an original supramolecular approach based on the use of spiropyran photo-responsive ligands and introduce light as an external and versatile control parameter to control the thickness of the shell. I will report on the synthesis of the photo-responsive ligands, the functionalization of palladium nanoparticles by ligand exchange, and on the formation of the core-shell systems.

Figure 1: Representation of the synthetic procedure of bimetallic core@shell nanoparticles controlled by light-responsive ligands.

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