Bicontinuous microemulsion as reaction media for the synthesis of Multimetallic Nanoparticles

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Platinum nanoparticles are widely used in catalysis applications such as PEM Fuel Cells because of their unique properties. However, they also are responsible for the high cost of such devices which prevents their commercialization [1]. Multimetallic Pt-containing nanoparticles are a promising alternative, allowing both a reduction of the cost and an increase in the catalyst activity [2]. Here we present a fast and reproducible procedure to synthetize high density multimetallic nanoparticles of 3-4 nm in a bicontinuous microemulsion, Figure 1. Synthesis has been monitored by UV-Vis spectroscopy, size by DLS and TEM and crystal structure by XRD.

Figure 1. TEM images of Ni-Pt nanoparticles synthetized in bicontinuous microemulsion.