

Synthesis of Colloidal Dendritic Metallic Nanoparticles and Their Applications

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Owing to their high surface area, metallic, dendritic nanoparticles have been considered as promising candidates for catalysis and biomedicine. Such particles have been prepared by the shape-controlled synthesis which is, however, generally very difficult since it requires delicate control over several factors such as temperature, pressure, and the number of chemicals involved. Here we propose the synthesis of colloidal dendritic nanoparticles without solid substrates and structure-directing agent. Our method has exploited an oil-in-water emulsion. As-made metallic nanoparticles are extensively characterized with UV-vis spectrophotometer and transmission electron microscopy. The size of the emulsion, the number of metal ion, and the type of oil are found to be key factors since they dictates the size and surface area of the dendritic nanoparticles.