

2nd World Congress and Expo on Nanotechnology and Material Science

April 04-06, 2016 at Dubai, UAE

Efficient Ag-nano assemblies separation for practical applications

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Rational assembly of nanoparticles (NPs) is relevant for effective exploitation of structure-dependent material properties and for making nanostructured materials with specific activity in optical (sensing) and electronic (nanodevices) applications. Despite relevant improvements on solid surfaces, fabrication and organization of narrow size- and shape distributions of NPs in solution remain a challenge. One of the most successful approaches for their fabrication involves use of colloids and well-established thiolate adsorption chemistry. The general difficulty in this controlling aggregation methodology is that, the linking process is random by nature and is difficult to control, generating a statistical distribution of aggregated NPs. An alternative to non-ideal NPs assembly would be an effective postsynthetic purification method. In this presentation, we will focus on this approach for collecting efficient and intense optical SERS active nanostructure for novel applications from NP-assemblies pool.

Biography:

Nekane Guarrotxena Ph.D. from the University of Complutense, Madrid-Spain in 1994 and has been post-doctoral research at the Ecole Nationale Supérieure d'Arts et Métiers, Paris-France (1994-1995) and the University of Science II, Montpellier-France (1995-1997). From 2008-2011, she was visiting professor in the Department of Chemistry, Biochemistry and Materials at University of California, Santa Barbara-USA and the CaSTL at University of California, Irvine-USA. She is currently Research Scientist at the Institute of Polymers Science and Technology, CSIC-Spain. Her research interest focuses on the synthesis and assembly of hybrid nanomaterials, nanoplasmonics, and their uses in nanobiotechnology applications (bioimaging, drug delivery, therapy and biosensing).