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## Detection of gold nanoparticles aggregation growth induced by nucleic acid through laser scanning confocal microscopy

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The gold nanoparticle (GNP) aggregation growth induced by deoxyribonucleic acid (DNA) is studied by laser scanning confocal and environmental scanning electron microscope. As in the investigated case, the direct light scattering analysis is not suitable, we observe the behavior of the fluorescence produced by a dye and we detect the aggregation by the shift and the broadening of the fluorescence peak. Results of laser scanning confocal microscopy images and the fluorescence emission spectra from lambda scan mode suggest, in fact, that the intruding of the hydrophobic moiety of the probe within the cationic surfactants bilayer film coating GNPs results in a Förster resonance energy transfer. The environmental scanning electron microscopy images show that DNA molecules act as template to assemble GNPs into three-dimensional structures which are reminiscent of the DNA helix. This study is useful to design better nano-biotechnological devices using GNPs and DNA.

### Biography

Ramla Gary has completed her PhD in 2017 from the Laboratory of Liquid Crystals and Interfaces in Physics department in collaboration with the Biological department at University of Calabria, Italy, and Post-doctoral studies from the same university. She has published more than five papers in reputed journals, and has participated in more than eight international and national conferences.

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