



Manipulation and Optical Detection of Colloidal Functional Plasmonic Nanostructures in Microfluidic Systems

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Résumé en anglais	<p>The very strong optical resonances of plasmonic nanostructures can be harnessed for sensitive detection of chemical and biomolecular analytes in small volumes. Here we describe an approach towards optical biosensing in microfluidic systems using plasmonic structures (functionalized gold nanoparticles) in colloidal suspension. The plasmonic nanoparticles provide the optical signal, in the form of resonant light scattering or absorption, and the microfluidic environment provides means for selectively manipulating the nanoparticles through fluid dynamics and electric fields. In the first part we discuss recent literature on functionalized colloidal particles and the methods for handling them in microfluidic systems. Then we experimentally address aspects of nanoparticle functionalization, detection through plasmonic resonant light scattering under dark-field illumination and the electrokinetic behavior of the particles under the action of an alternating electric field.</p>
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- [8] [http://okina.univ-angers.fr/publications?f\[author\]=23533](http://okina.univ-angers.fr/publications?f[author]=23533)
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