

## Fluorescence correlation spectroscopy as a tool in colloid and polymer science

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Fluorescence correlation spectroscopy (FCS) is a very sensitive and selective technique for studying the mobility of small fluorescent molecules, macromolecules or nanoparticles in various environments. While initially developed and still predominantly used in molecular and cell biology, recently the method has found wide spread applications in polymer, colloid and interface science [1]. In this talk I will present some recent examples of the work of our group in this direction.

After an introduction to the FCS basic principles, I will show how the method can be used to study the aggregation behavior of amphiphilic copolymers [2] and the loading of nanoparticles with small “cargo” molecules [3]. Other examples will include probing the transport of nanoparticles into polymersomes [4] and the coalescence of emulsion droplets during nanoparticle preparation [5]. Finally, the application of FCS to address dynamics of small penetrants in polymer solutions [6], cross-linked networks [7] and bulk polymers [8] will be discussed.

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