

Abstract Submitted  
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**X-ray photon correlation spectroscopy in microfluidic systems**

ANDREI FLUERASU, European Synchrotron Radiation Facility, Grenoble — We present a new experimental method that combines X-ray photon Correlation Spectroscopy (XPCS) and microfluidics and allows the direct measurement of the mesoscale dynamics of various soft matter systems (e.g. colloids, polymers, biological molecules like proteins, RNA, etc.) under flow conditions. Such a setup reduces the risk of beam damage and also allows time-resolved studies of various processes taking place in mixing flowcells. In the experiments reported here, we have used colloidal suspensions of hard-sphere systems, and studied their Brownian dynamics under laminar flow. Our experimental results and theoretical predictions show that the diffusive (Brownian) dynamics of the colloids can be decoupled from the flow-induced, convective dynamics.

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