

# Physics Colloquium

**Dr. Jean-Baptiste Salmon**

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## **“Microfluidic measurements of collective diffusion in complex fluids : drying, ultrafiltration, and pervaporation”**

*After an introduction to diffusion phenomena in liquid mixtures and in particular in complex fluids, I will show that microfluidic tools allow to precisely measure the collective (or mutual) diffusion coefficient of soft matter systems: colloidal dispersions, copolymer solutions, etc.*

*Different experimental configurations allowing these measurements will be presented : drying of 2D confined droplets, pervaporation and ultrafiltration in straight microfluidic channels.*

*Particular emphasis will be placed on the case of charged colloidal dispersions, for which fundamental questions remain open, especially concerning the dynamics of ionic species.*

Jean-Baptiste Salmon obtained his Ph.D. in 2003 at the University of Bordeaux (France) working on the rheology of complex fluids. In 2003-2004, he worked at ESPCI (Paris) as a postdoctoral researcher on reaction-diffusion dynamics in microfluidic channels. Since 2004, he is a research scientist (Centre National de la Recherche Scientifique, CNRS) at the LOF laboratory, a joint team between CNRS, Solvay, and the university of Bordeaux. His current research focuses on the study of diffusive mass transport in soft matter systems, notably through the development of microfluidic experiments. In parallel, he uses these same tools for various applications ranging from protein crystallization to the engineering of micro-materials, and to address industrial issues in collaboration with Solvay.

**Thursday, September 30 via Zoom**

**On the regular schedule that starts at 4:25 PM**

Meeting ID: 972 1274 7894

Passcode: 631869

***(This is an online colloquium)***