



**UNIVERSITÉ
DE GENÈVE**

FACULTÉ DES SCIENCES

LE DEPARTEMENT DE CHIMIE PHYSIQUE

a le plaisir de vous inviter à la

CONFERENCE

Intitulée

**SUPER-RESOLUTION MICROSCOPY:
REVEALING THE COMPLEXITY OF MICROGELS**

donnée par

Prof. Dominik WÖLL

RWTH AACHEN

le MARDI 6 OCTOBRE à 16h30

SALLE 1S081

Sciences III

30 quai Ernest-Ansermet ou 4 bld d'Yvoy

Responsable : Dr. Alexandre FUERSTENBERG

Abstract:

Super-resolution fluorescence microscopy has emerged as a powerful toolbox for investigating complex polymer systems at the nanoscale. In this talk, I will discuss how these techniques can be used to explore hydrogel nano- and microparticles, commonly referred to as nano- or microgels. I will highlight how super-resolution imaging provides access to key structural and dynamic properties, including microgel morphology, shape and deformation, internal compartmentalization, cross-linker distribution, polarity and dynamics within microgels.

Particular emphasis will be placed on the possibilities offered by three-dimensional super-resolution imaging, which enables the detailed characterization of microgel structures and their deformation. Going beyond conventional localization, the combination of super-resolution microscopy with fluorescence lifetime and spectral information, correlative imaging, and complementary experimental techniques provides additional insights into the heterogeneous and complex nature of polymer systems.

The talk will highlight recent developments and future perspectives, illustrating how advanced fluorescence microscopy can reveal structural, chemical, and dynamic information that is inaccessible with conventional imaging approaches.