

演講摘要： Coloured and fluorescent dye molecules have been and are being used for locally measuring the properties and chemical composition of solutions, and to detect the presence of specific analytes. These dyes are also utilized for monitoring various phenomena, such as flow, mixing, polymerization, or transport processes in living organisms. In the latter case, they may be chemically coupled to biological entities such as proteins or DNA. The seminar will present the fundamental physics and chemistry of these molecular materials and their interaction with light, and present examples of the development and applications of molecular probes and related materials.

Biography

Martinus Werts studied chemistry at the University of Amsterdam (Netherlands), and obtained his Ph.D. there (2000) for work on luminescent lanthanide complexes for biomedical and photonic applications. He then worked as a post-doc at CEA/Saclay (France) on the self-assembly of gold nanoparticles for molecular electronics. In 2002, he was recruited by CNRS as a research scientist and investigated multiphoton excitation of molecular probes and nanoparticles. Since 2009 he is at ENS Rennes where he combines microfluidics and optical spectroscopy to study and control the behaviour of nanoparticles in solution and to develop new strategies for biological and environmental sensing.