

14:45 Micro et nanotechnologies au service
des sciences du vivant et de la médecine
*Micro and nanotechnologies for life sciences
and medicine*

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Through the miniaturization down to the molecular scale, the fabrication of innovative devices, systems and chips dedicated to medical applications becomes possible. The expectations are very high in terms of diagnosis at the early stage of a disease, for new therapies and for increasing the capabilities of medical imagery. Another aspect which is less visible concerns the acquisition of new knowledge in biology at the cellular and sub-cellular levels which can strongly impact the progresses for curing severe and complex diseases such as cancer. Indeed, through the micro and nanotechnologies the manipulation and observation of DNA, proteins and cells, allow for novel experiments to be conducted in the perspective of investigating, in a new way, basic fundamental mechanisms of biology. In this presentation, I will present the benefits of developing Micro and Nanoscale technologies in the field of biology and medicine. I will rapidly present the landscape of what is called today nano-medicine. I will then illustrate this scientific challenge through the presentation of several projects running in the Nanobiosystem research group at LAAS-CNRS and on the basis of major achievements obtained around the world.

Christophe Vieu, PhD in solid state physics is Professor of Physics at the National Institute of Applied Sciences (INSA), an Engineering School in Toulouse. He is conducting research in the field of Nanobiotechnologies at LAAS-CNRS. His main fields of interests are : Nanopatterning, Biopatterning, Nanoscale devices and tools for biodetection and medicine, education in Nanotechnologies. Author or coauthor of more than 130 publications in international conference proceedings, journals and books, he has been involved in several European projects.