



Dominique Collard

Head of Laboratory for Integrated Micro
Mechatronic systems (Tokyo)



16 December 2014 – 02:00 p.m

Université de Technologie de Compiègne
Amphi Bessel – Centre de Recherches de Royallieu
rue Personne de Roberval
60200 Compiègne



Silicon nano Tweezers, a versatile bio physical sensor: an emblematic example of the multi disciplinary research performed in CNRS UMI : LIMMS/CNRS-IIS

Short Bio:

Dominique Collard was born in Cambrai, France in 1958. He received the Eng. Degree from ISEN (Institut Supérieur d'Electronique et du Numérique) in 1980, and the PhD degree from the University of Lille in 1984. From 1985 to 1986, he was with TOSHIBA ULSI research Center in Kawasaki, Japan, as visiting scientist. He entered the Centre National de la Recherche Scientifique (CNRS) as senior researcher in 1988, and settled a research group on process and device simulation at ISEN and IEMN (Institut d'Electronique, de Microélectronique et de Nanotechnologie), Lille, France. In 1995-1997, he was Director of the Laboratory for Integrated Micromechatronic Systems (LIMMS), Tokyo, Japan, a joint CNRS laboratory with the Institute of Industrial Science of the University of Tokyo. Within LIMMS he worked on silicon based electrostatic actuator. From 1997, he is with IEMN, as CNRS research director and settled a silicon micro-system group. November 2000-July 2005, he has a Professor position at the University of Tokyo and was Director of the CIRMM/CNRS (Center of International Research on MicroMechatronics). From August 2005, he joint a second time the Laboratory for Integrated Micromechatronic Systems (LIMMS), Tokyo, Japan where he was appointed director in Sept 2007. In Dec. 2011, he became coordinator of EC/FP7 INCOLAB: EUJO-LIMMS aiming to open LIMMS to European partners and first EC laboratory in Japan. His current scientific interest covers micro and nano systems for applications in biology and nanotechnology.

Abstract:

The presentation will encompass the introduction of the Laboratory of Integrated Micro Mechatronic Systems, LIMMS/CNRS-IIS, the first International Mixt Unit of CNRS in Asia, that are developped in collaboration with the Institute of Industrial Science of The University of Tokyo for 20 years now. LIMMS/CNRS-IIS was recently promoted has the first and only EU Lab in Japan, expending the hosting protocol to 4 others European institution. The multidisciplinary stimulation to push advanced LIMMS project will be illustrated by the Silicon NanoTweezers, a micro pincet able to handle filamentary biomolecules bundle and cells to measure their electrical and bio mechanical characteristics. A MEMS concept that is now applied in many areas including the real time study of DNA degradation under therapeutic X-Ray by mechanical means for the improvement of tumor treatment based on basic knowledge.