Lecture 4

February 19, 2004
EC 2410

Bionanotechnology Lecture Series 2003-2004

The FIU Department of Biomedical Engineering Presents Pier Paolo Pompa

Pier Paolo Pompa is currently a Ph.D. student at the National Nanotechnology Laboratory (NNL) in Lecce. Prior to his Ph.D. work, Pompa completed two fellowships with the Department of Physics at the University of Lecce, where he worked on the effects of laser radiation on different biological systems. His recent research activities focus on the biophysical aspects of nanobiotechnology, photophysics of biomolecules (proteins, enzymes, neurotransmitters) as well as biological dyes, nanobiosensors and biomolecular electronics.

Lecture Topic:

Electronic Nanodevices Based on Self-Assembled Metalloproteins

A key challenge of the current research in nanoelectronics is the realization of biomolecular devices. The use of electron-transfer proteins, such as the blue copper protein azurin (Az), is particularly attractive because of its natural redox properties and self assembly capability. This lecture will present results about the fabrication, characterization and modeling of devices based on this redox protein.

Particular attention has also been devoted to the assessment of the folding and structural stability of the protein in the air or upon immobilization in the solid state. The operation principle of the realized devices is based on the physiological electron transfer function of the metalloprotein azurin. The lecture will address research results about the analysis of the conformational state of the azurin monolayers developed for such devices.

Lecture will be held on Thursday, February 19, 2004 at 11:00 a.m.
Engineering Center, Room 2410.
10555 West Flagler Street
Miami, FL 33174

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The Department of Biomedical Engineering at Florida International University is constantly undertaking research on protein-based nanotechnology (www.eng.fiu.edu/bmei/renu). This includes a lengthy understanding of protein structure, dynamics, and engineering. Because of its inter-disciplinary nature, protein-based nanotechnology encompasses chemistry, biology, and physics. This seminar series will focus on cutting-edge bionanotechnology and its benefits to society.