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ΣΕΜΙΝΑΡΙΟ ΤΜΗΜΑ ΦΥΣΙΚΗΣ

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Αίθουσα Α₃₁

Κύκλος σεμιναρίων

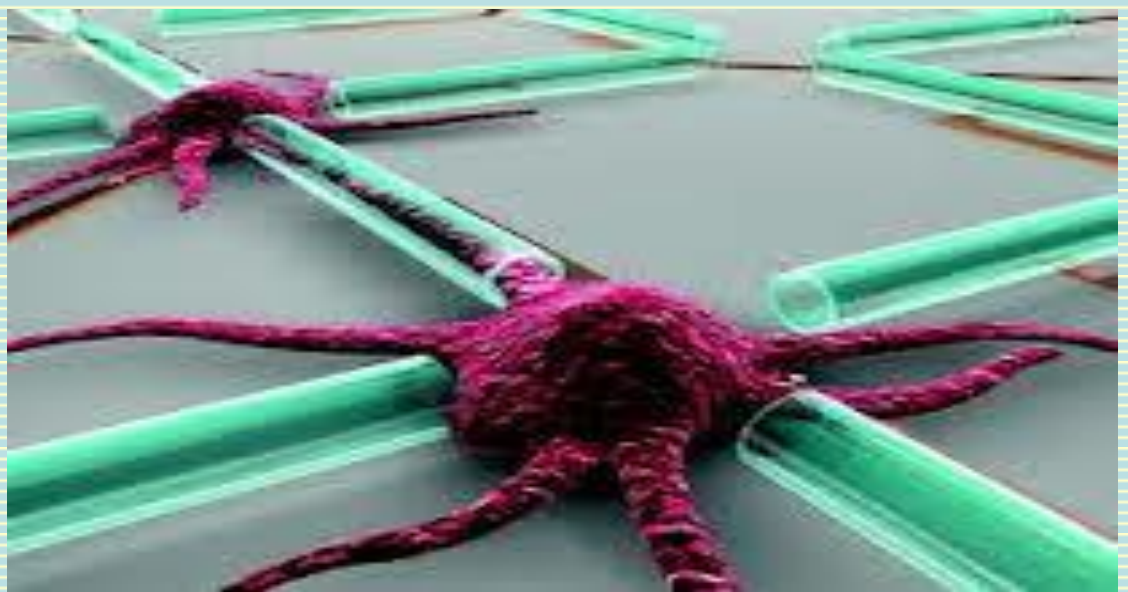


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Organic Bioelectronics



Prof. George Malliaras

Department Head, Department of Bioelectronics,
Microelectronics Center of Provence, France

Organic (i.e. carbon-based) semiconductors are being considered for many applications in electronics, including flat panel displays, printable and large-area devices, and solar cells. In this presentation I will make the case that the biological applications of organic semiconductors are significant¹. I will argue that this is an arena where organic materials have an advantage compared to traditional electronic materials such as silicon. By discussing the physical structure and morphology of conjugated polymers I will emphasize the key properties that make organic materials ideal for bioelectronics applications, in areas including neuroscience and tissue engineering. I will highlight a few recent devices that show either unique features, or exceptionally high performance²⁻⁴. Based on these examples I will discuss the future trajectory of this emerging field, note areas where further research is needed, and suggest possible applications in the short term.

Το προφίλ του ομιλητή



Professor George Malliaras is the Head of the Department of Bioelectronics (BEL) at the Centre Microélectronique de Provence, in France. He received a BS in Physics from the Aristotle University (Greece) in 1991, and a PhD in Mathematics and Physical Sciences, cum laude, from the University of Groningen (the Netherlands) in 1995. After a two year postdoc at the IBM Almaden Research Center (California), he joined the faculty in the Department of Materials Science and Engineering at Cornell University (New York). From 2006 to 2009 he served as the Lester B. Knight Director of the Cornell NanoScale Science & Technology Facility. He joined the Centre Microélectronique de Provence in the Fall of 2009. His research on organic electronics and bioelectronics has been recognized with awards from the New York Academy of Sciences, the US National Science Foundation, and DuPont. He is a co-author of 200+ publications in peer-reviewed journals that have received over 10,000 citations. His h-index is 57 (google scholar, 1/14). He is a Fellow of the Royal Society of Chemistry.