



COLLOQUIUM

Wednesday 6-11-2024 14:00

Lecture Hall (Αμφιθέατρο Φυσικής), Physics Building, Zografou Campus,
National Technical University of Athens

“Materials and Devices for Bioelectronic Medicine”

Prof. George Malliaras

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Bioelectronic medicine provides a new means of addressing disease via the electrical stimulation of tissues: Deep brain stimulation, for example, has shown exceptional promise in the treatment of neurological and neuropsychiatric disorders, while stimulation of peripheral nerves is being explored to treat autoimmune disorders. To bring these technologies to patients at scale, however, significant challenges remain to be addressed. Key among these is our ability to establish efficient and stable interfaces between electronics and the human body. I will show examples of how this can be achieved using materials with mixed electronic-ionic conductivity, and discuss devices engineered to communicate with the body and evolve with it.



George Malliaras is the Prince Philip Professor of Technology at the University of Cambridge. 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 postdocs at the University of Groningen and at the IBM Almaden Research Center (California), he joined the faculty in the Department of Materials Science and Engineering at Cornell University (New York) in 1999. From 2006 to 2009 he served as the *Lester B. Knight Director* of the Cornell NanoScale Science & Technology Facility. He moved to the Ecole des Mines de St. Etienne (France) in 2009, where he started the Department of Bioelectronics and served as Department Head. He joined the University of Cambridge in 2017.