



**Jeudi 27 avril 2017 de 14 h à 15 h**

**LMGP-2ème étage-salle de séminaire**

### **High energy density Lithium-ion cells based on silicon anodes**

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#### **Abstract**

The last decades Lithium-ion batteries are widely considered as the energy storage systems appropriate for use in low (laptops, cameras and smart cellular phones) and high (hybrid and all electric vehicles, renewables, aerospace) energy and power demand applications. Therefore, there is a strong need for energy storage systems with higher energy and power densities. One way to achieve this goal concerns the development of new anode materials alternative to graphite that is currently used in commercial lithium ion batteries. Silicon is considered as an alternative attractive high capacity anode material for Li-ion batteries with theoretical specific capacity of Si almost 10 times higher than that of graphite. Technological challenges and related efforts will be presented.

#### **Short Bio/CV**

**Assistant Professor Filippos V. Farmakis** received in 1996 his B.S. degree in Physics from Aristotle University of Thessaloniki, Greece, the M.Sc. degree in Optics, Optoelectronics and Microwaves from Grenoble Institute of Technology, France, in 1997 and his Ph.D. from the same School in 2000. After that he joined UNAXIS SA, Palaiseau, France as Process Engineer and later as R&D Team Leader and worked on thin film deposition on PECVD production systems. In 2006 he contacted research on chemical sensing field-effects devices and thin film transistors with IMEL, NCSR Demokritos, Athens, Greece. In 2008, he was employed as Head of Technology at Heliosphera SA, a Greek company producing thin film photovoltaic modules in a 60MW manufacturing line. On July 2012 he joined Democritus University of Thrace, Electrical and Computer Engineering Department as Lecturer and from July 2015 he is Assistant Professor. He pursues research on solar cell technology, thin films, sensors and lithium- ion cells.

