



*In the frame of "Wearable Systems and HMI" research at DIMEAS,  
I'm glad to invite you to the seminar*

**18 April 2018, h.15:30**

**Room DE**

C.so Duca degli Abruzzi 24  
Politecnico di Torino

# Graphene and 2D materials

## *opportunities and challenges in wearable systems*

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### **Abstract**

Graphene and two-dimensional materials have attracted tremendous attention in the last decade due to their fascinating electrical, mechanical, and chemical properties. However, being deployed in form of flakes, with  $\mu\text{m}$  size, makes almost impossible any efforts in developing electronics devices on industrial scale. Successfully integrating this class of materials in standard CMOS-like processes is the key to build up real devices and relies on the synthesis of high-quality films. LPCVD (Low Pressure Chemical Vapor Deposition) has been recently adopted to produce high quality 2D-film on large area, with potential impact on a wide range of applications in large area electronics, such as transparent conducting and flexible films suitable for photovoltaics and display industry. Given the versatility and bio-compatibility of such materials, we are interested in studying and developing a new class of electronics, based on the integration of multiple devices on the same substrate in order to build up complex systems at the large area and target applications in the IoT, bioelectronics and wearable systems.



### **Speaker's Biography**

Dr. Azzellino holds both M. Sc. and PhD (with honors) in Electronics Engineering from Politecnico di Milano, where he focused on the development of photodetectors and FETs entirely based on organic and nanostructured semiconductors for large area devices in optoelectronics. He was the recipient of the Rocca and SIPD (Scuola Interpolitecnica) Fellowships that granted him a stay at MIT during his PhD in the group of Prof. Bulović. He was then appointed as Postdoctoral Associate in RLE (Research Laboratory of Electronics) at MIT to continue working in the same group on the development of novel LEDs, based on semiconducting nanocrystals (aka quantum dots). His scientific interest on low-dimensionality systems has been recently focusing on graphene and 2D materials. He is currently working at MIT with Proff. Kong and Palacios on the development of large area 2D materials, grown by CVD, to target applications in nano and opto-electronics.

**Prof. Giorgio De Pasquale**

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# Seminar location

## Room DE - Laboratory of Energy

Enter the Laboratory building, first door on the left, lower ground floor.

