

*Dipartimento di Scienze Fisiche, Informatiche e Matematiche
Università di Modena e Reggio Emilia
Via G. Campi 213/A, 41125 Modena Italy*

SEMINAR ANNOUNCEMENT

Date and time: Friday 23rd September 2022, at 12h

Venue: Room L1.5, FIM Department via G. Campi 213A, Modena.

Speaker: Dr. Giuseppe Cantarella

Title: *Flexible Electronics: Physics, Materials and Devices for a new Technological Paradigm.*

Abstract: Although advances in silicon-based electronics are going towards the miniaturization of devices and the amelioration of their performance, the field of flexible electronics is rapidly expanding in the last years, to target new fields of research. In this regards, the combination of physics, materials science, chemistry and engineering has paved the route for a new class of electronics devices (i.e. sensors, circuits,..) with novel functionalities, such as mechanical flexibility, unobtrusiveness and biocompatibility. This has resulted in pioneering applications, including wearables, biomedicine and smart agriculture. In this talk, I will go through all the recent progress in the field of flexible electronics, as well as all the limitations still to overcome. Main focus of the talk will be stretchable thin-film electronics (i.e. sensors, transistors, circuits,..), as well as green devices, for applications, ranging from robotics to smart implants and the Internet-of-Things (IoT).



Figure. Flexible Electronics with different functionalities (from left to right): transparency, mechanical flexibility and biocompatibility.

Biography: Giuseppe Cantarella received his B.Sc. in Information and Communication Technologies Engineering from Politecnico di Torino (Italy) in 2011, and M.Sc. in Nanotechnologies for ICTs from Politecnico di Torino (Italy), INP Grenoble (France) and Ecole Polytechnique Federale de Lausanne EPFL (Switzerland) in 2013. He obtained his Ph.D. in Electrical Engineering from ETH Zurich (Switzerland) in 2018 with a thesis entitled “Stretchable Oxide Semiconductor Transistors and Circuits”. He was Postdoctoral Fellow at the [Nanomaterials Engineering Research Group](#), at ETH Zurich (Switzerland), and at the [Sensing Technologies Lab](#), at the Free University of Bozen-Bolzano (Italy). In February 2020, he has been appointed Assistant Professor (RTD-A) at the Free University of Bozen-Bolzano (Italy).

Host: Prof. Marco Affronte marco.affronte@unimore.it