



POLITECNICO
DI TORINO

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ore 15.00

Aula Magna, Politecnico di Torino
C.so Duca degli Abruzzi, 24

**Lectio
Magistralis**

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Ferrari

Grafene: Applicazioni e Nuove Tecnologie

I nuovi materiali e le nuove tecnologie possono potenzialmente cambiare ogni aspetto della vita quotidiana. Per farlo, devono apportare innovazioni radicali, non incrementali, con nuove funzionalità e versatilità d'uso non possibili con i prodotti già esistenti. Più la nuova tecnologia è applicabile in settori diversi, maggiori sono le possibilità di successo. Il grafene è il primo di migliaia di nuovi materiali ultrasottili ad essere studiato sia dal punto di vista della scienza di base che delle applicazioni. La Comunità Europea ha investito 1 miliardo di Euro nel progetto "Graphene Flagship", con l'obiettivo di generare un impatto innovativo su diversi settori industriali. Nel mio intervento riassumerò i progressi compiuti sino ad ora, e i punti chiave per gli sviluppi futuri.

Disruptive technologies are usually characterised by universal, versatile applications, which change many aspects of our life simultaneously, penetrating every corner of our existence. In order to become disruptive, a new technology needs to offer not incremental, but dramatic, orders-of-magnitude improvements. Moreover, the more universal the technology, the better chances it has for broad base success.

The Graphene Flagship has brought together universities, research centres and companies from most European Countries. At the end of the ramp-up phase significant progress has been made in taking graphene, related layered materials and hybrid systems from a state of raw potential to a point where they can revolutionize multiple industries.

I will overview the progress done thus far and the future roadmap.

Andrea C. Ferrari earned a PhD in electrical engineering from Cambridge University in 2001, after a Laurea in Nuclear Engineering from Politecnico di Milano, Italy, in 1997.

He is Professor of Nanotechnology and founding Director of the Cambridge Graphene Centre, as well as head of the Nanomaterials and Spectroscopy group at the Department of Engineering and Nanoscience Centre of Cambridge University.

He is Fellow of Pembroke College in Cambridge, of the American Physical Society, of the Institute of Physics, and holder of the Royal Society Wolfson Research Merit Award.

He is also the Chairman of the Executive Board of the 10-year, 1 Billion Euros EU Flagship on Graphene and one of the lead Principal Investigators.

He is author of almost 400 papers in international journals, with more than 50.000 citations, and has given more than 260 Invited, Plenary and Keynote Conference Talks.

His research interests include nanomaterials growth, modelling, characterization, and devices. In particular, he focuses on graphene, nanotubes, diamond-like carbon, and nanowires for applications in electronics and photonics.

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