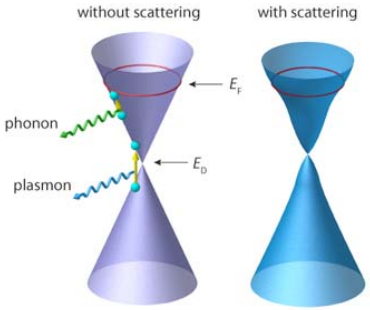
Nanotec: Session 7
Graphene

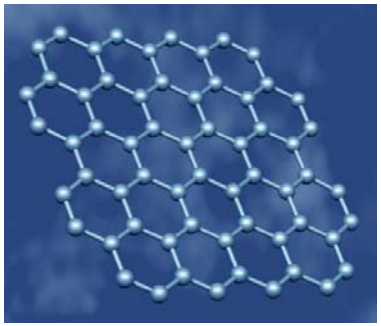
Speaker: Jari Kinaret - Chalmers University of Technology, Gothenburg, Sweden (35 minutes)

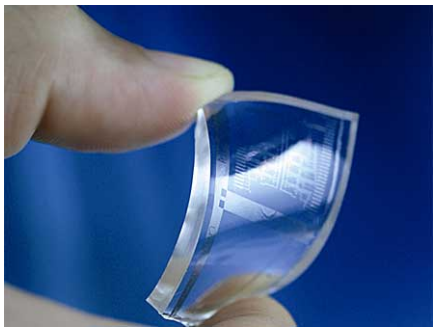
Discussant: Dimitris Pavlidis - Centre National de la Recherche Scientifique, IEMN, Villeneuve d'Ascq, France (5 minutes)

Rapporteur: Wolfgang Rosenstiel - University of Tübingen-Edacentrum GmbH, Hannover, Germany

Group discussion (20 minutes)







Graphene

Graphene is a material with remarkable physical and electrical properties. These properties and its discovery led to the award of the 2010 Nobel Prize in Physics. Graphene can be used as field effect transistor for high performance RF or digital circuit applications. Graphene's usefulness for these applications has been vigorously debated due to some inherent limitations (lack of a bandgap).

Kroemer's Lemma of New Technology:

The principal applications of any sufficiently new and innovative technology have always been—and will continue to be—applications created by that technology.

What are the applications and opportunities that are being created from Graphene's unique properties

Can we predict what the future may hold?

Graphene Questions

1. Why are you excited about graphene for your particular application(s)?
2. Comparison to current state-of-the-art
3. What challenges must be solved to be disruptive for the particular application(s)? Are these reality or fantasy?
4. Substrates and lattice matched conditions, Grwoth: CVD etc
5. Defects, traps, impact on performance
6. Is it just a university or also an industry attractive device?
7. If there are industry applications, which field drives them the most ? – Electronics, Optoelectronics, Thermal Management, Resonators, Bio ?
8. Intermixing of other 2D (BN, $MoSe_2$ etc) materials?