



National Student Travel Foundation (NSTF)
**Fifth Session: Small is Beautiful: The First Carbon Nanotube
Computer**

Date April 4, 2014

Venue Europe House
St. Paul's Street
Valletta

5:30 pm Registration of participants

5:45 pm Opening speech

6:00 pm Presentations
Presentation 1: Daniel Camilleri & Claire Farrugia

6:10 pm Presentations
Presentation 2: Maria Xiberras

6:20 pm Presentations
Presentation 3: Kris Baldacchino & Carl Muscat

6:30 pm Coffee Break

6:50 pm Questions by participants

7:15 pm Keynote speech by Prof. Irene Sciriha

7:30 pm Notices and Conclusion



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Abstracts

Presentation 1: Daniel Camilleri & Claire Farrugia

Computers have become a very important part of everyday life. Their current speed is incredible but future applications will require more processing power and advancements in silicon are slowly dying out as the technology is pushed to its limits. The solution is a brand new approach to transistors by using a different element from the same family: Carbon in the form of nanotubes. Our presentation will focus on this incredible allotrope of Carbon and how it will completely reshape the future of computing.

Presentation 2: Maria Xiberras

Computers are the most used technological device nowadays. These are made with transistors and semiconductors which at times are not very efficient. Technology has improved and students of Stanford university produced the first Carbon Nanotube based transistors. Carbon Nanotubes could be used due to the fact that they share the same properties with semiconductors. In my presentation I am going to discuss these properties and how these improve technology. Carbon Nanotube computers on silicon wafer aim for smaller, more energy-efficient CMOS processors. Using Carbon Nanotubes in computers gives the chance to use them in other technological things such as mobiles and tablets too. Although these may take a bit of time until we see them in phones, tablets, and computers, it is a great improvement for technology.

Presentation 3: Kris Baldacchino & Carl Muscat

Silicon has been a main building block regarding electronics ever since the beginning. However it might be possible that within the next decade, transistors in



electronics may not be made out of silicon but rather out of carbon nanotubes. Work on carbon nanotubes is a rather recent topic and in fact the first carbon nanotube computer was built in September of 2013. Carbon nanotubes are allotropes of carbon with a cylindrical structure. It is these cylindrical structures which give these nanotubes the properties which make them so valuable to nanotechnology and electronics and could lead to a paradigm shift in the way computers and other electronics operate. Carbon nanotubes may lead to computers becoming faster and more energy efficient, an important factor in today's world where one cannot simply waste as much energy as one wants. Carbon nanotubes may lead to the electronics to become smaller and smaller and thus truly being able to form complex electronics on a truly nano-scale.