Imperial College London

University of Cyprus

MSCA 2021 Journey

Christoforos Panteli PhD

Optical and Semiconductor Devices

Centre of Bio-Inspired Technology

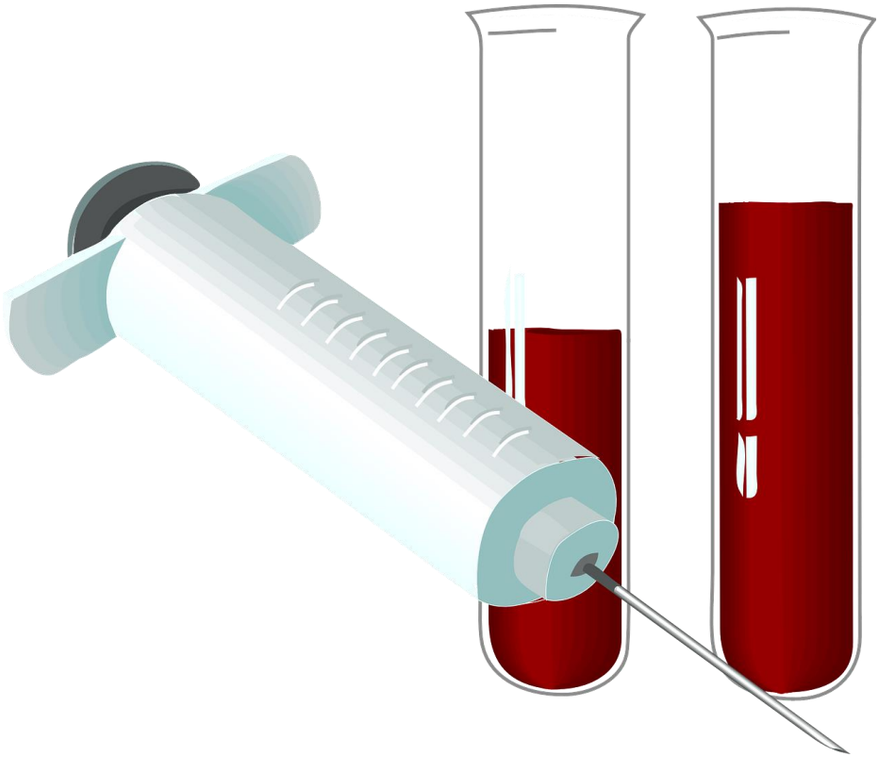
Electrical and Electronic Engineering Department

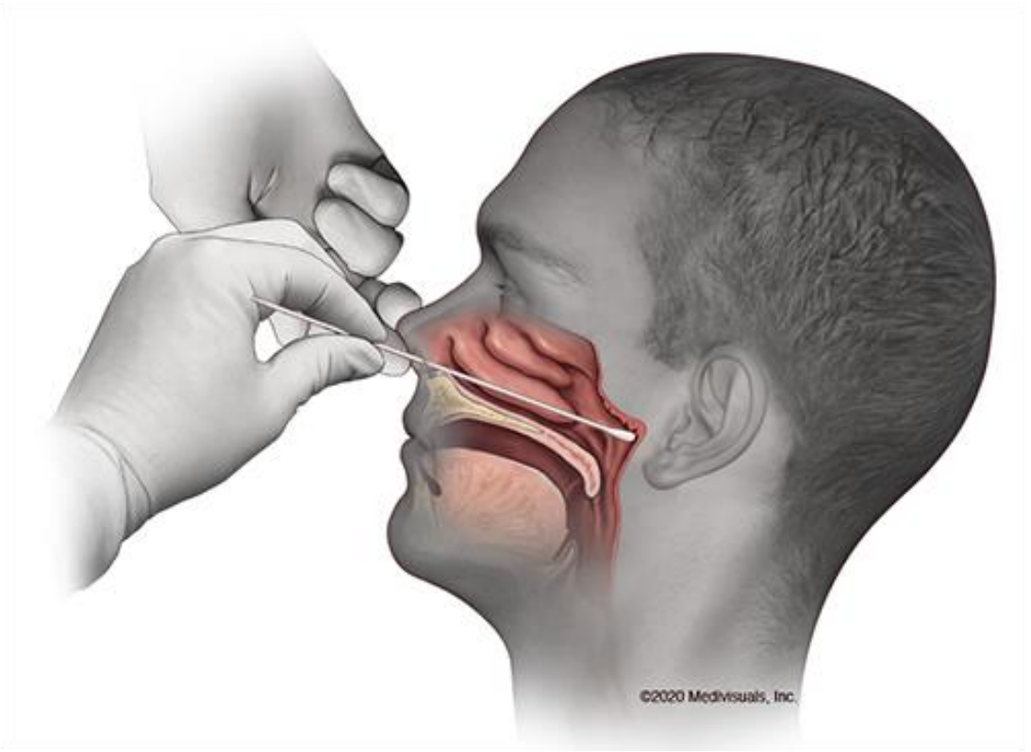
Imperial College London

12 April 2022

Personal experiences

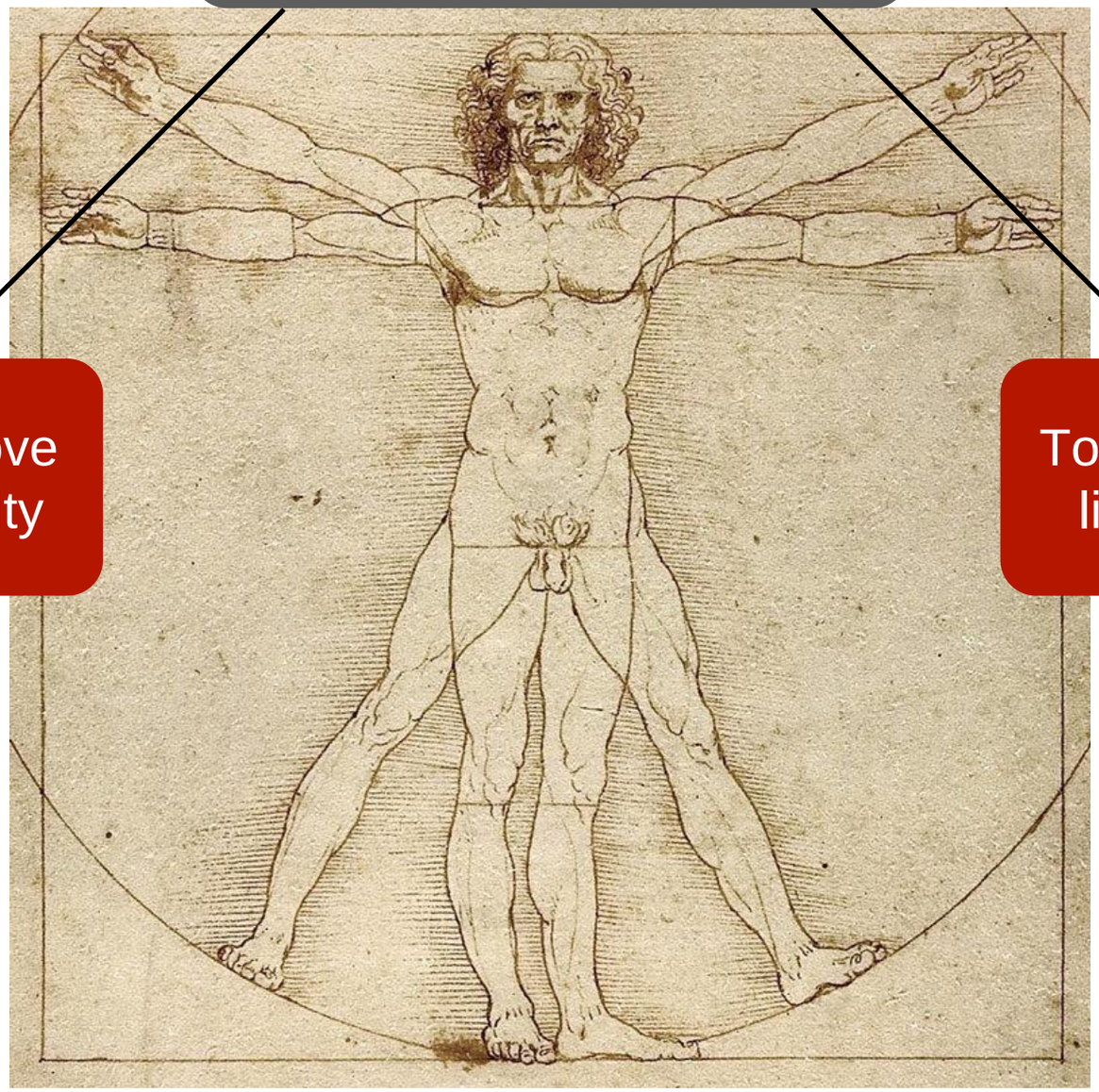
- Who has done blood analysis test?
- Who has done COVID-19 test?





Why biomedical technology?

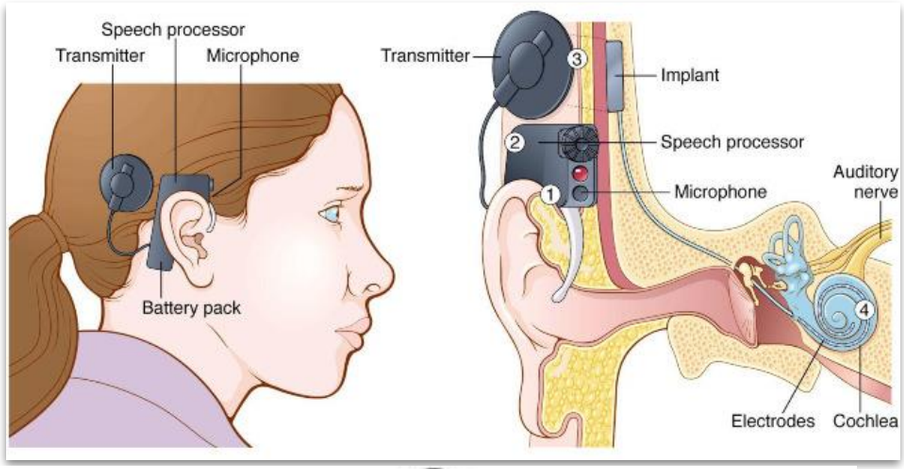
To understand the functions of the human body

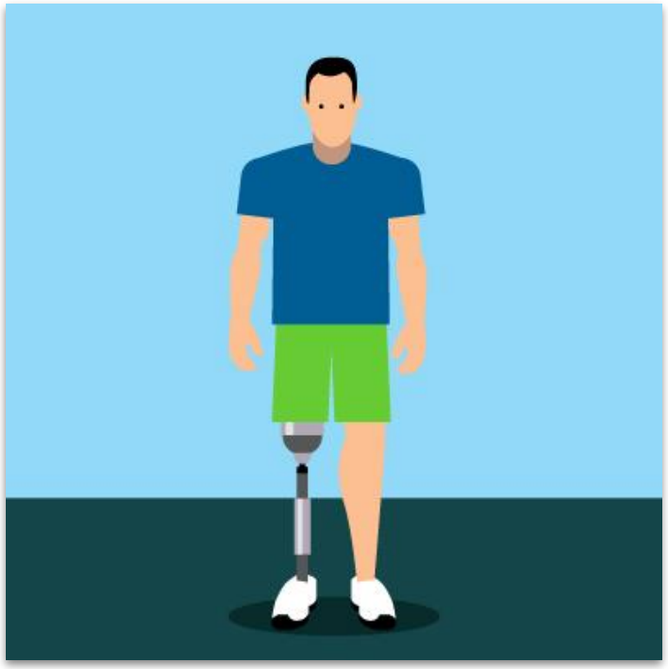


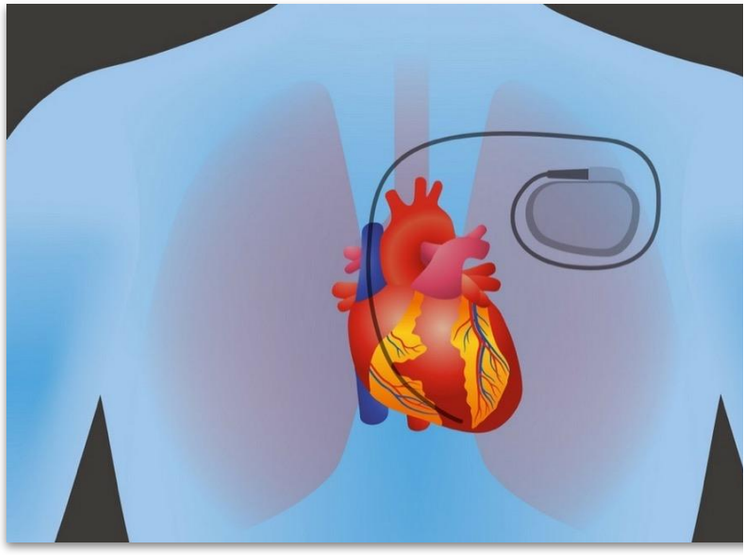
To improve life quality

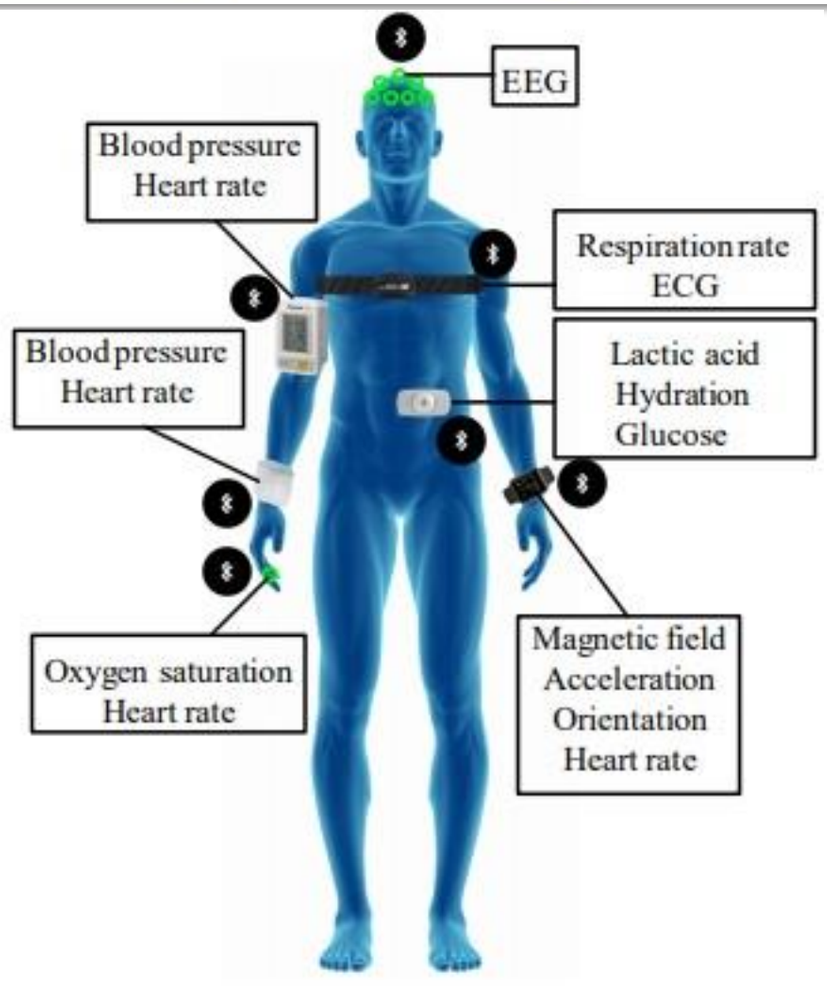
To increase life span

Examples of biomedical technology









https://www.rfwireless-world.com/Articles/Medical-sensor-basics-and-medical-sensor-types.html

What is the future of biomedical technology?

Low power

Miniature Size

Low Cost

Reliability

High Sensitivity

High Accuracy

Internet of Things Ready

Local intelligence

Real-time

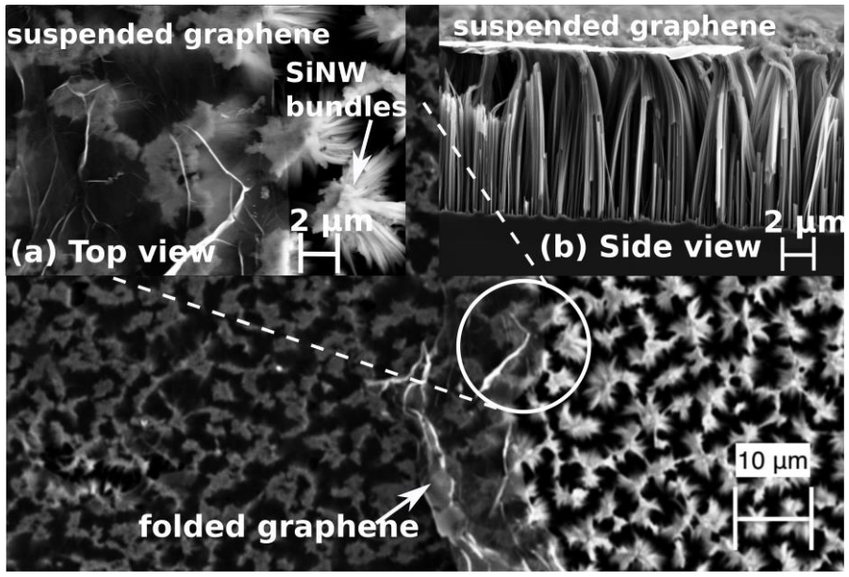
Non-Invasive

Personal

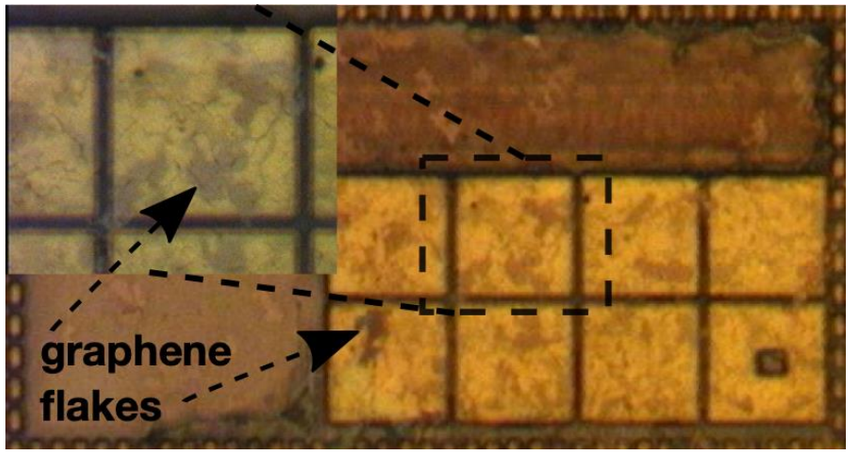
Background

- Electrical and Electronic Engineering Degree
- PhD in nanoscale biomedical sensors
  - Graphene-based gas sensor for **breath analysis**
  - CMOS-based pH sensor post-processing for DNA sequencing
- Post Doc on nanomaterials for environmentally friendly soldering of electronic devices
- Post Doc on **wearable real-time breathing monitoring systems**

Graphene on Silicon Nanowire Arrays

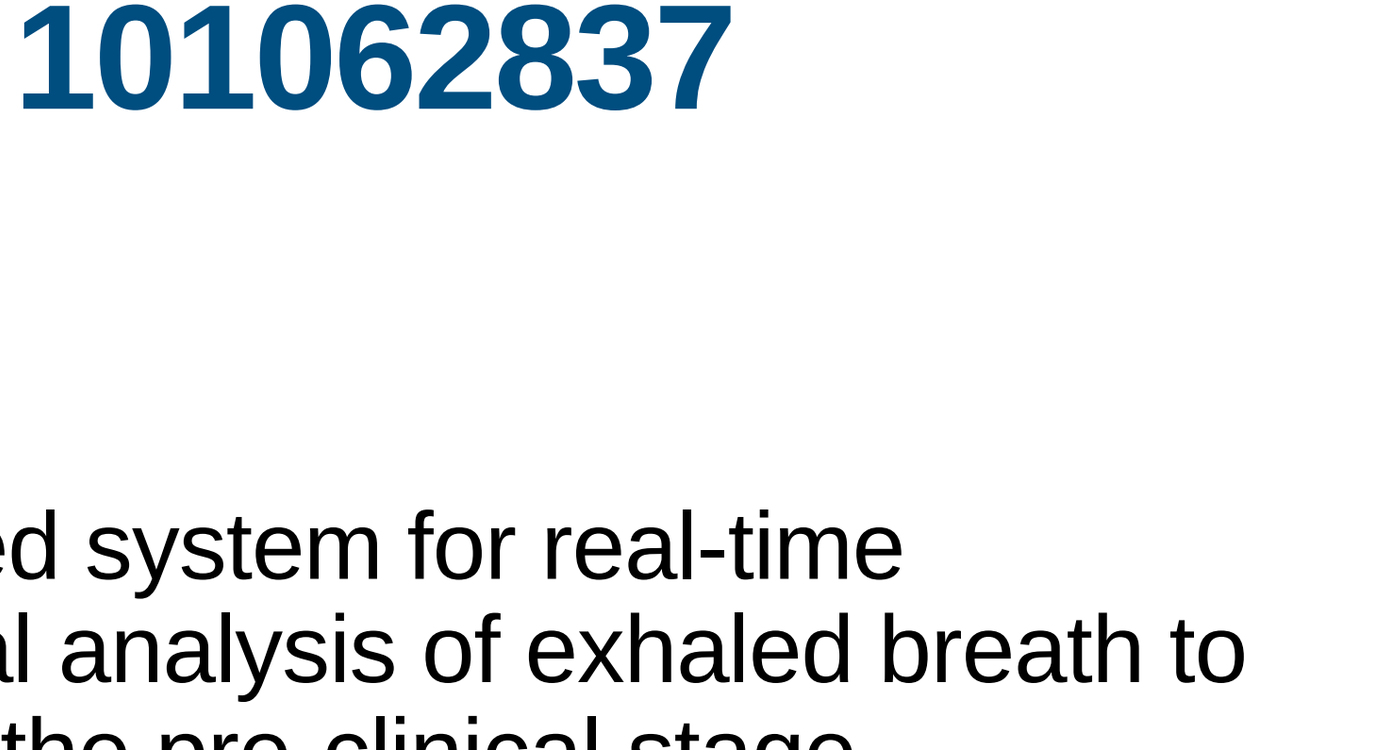


multilayer graphene coated



SeplSensoR - 101062837

- Develop an integrated system for real-time monitoring and signal analysis of exhaled breath to detect sepsis during the pre-clinical stage.
- Gas sensing chip fabrication
- Electronic readout
- Signal Processing



Start by asking your self WHY?

- Why do you want to apply for MSCA fellowship?
- If you cannot answer this question for your self, no-one will.
- You need to have a clear objective to stay motivated.

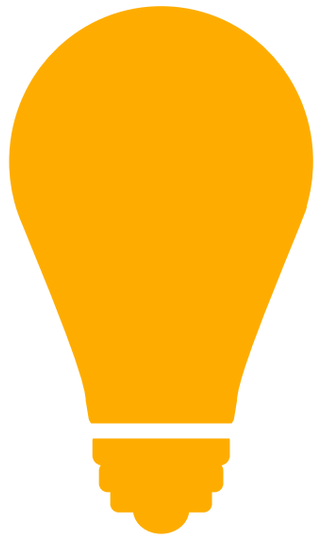
- My reasons:
  - Wanted to return to Cyprus and keep doing science.
  - Make an impact in the breath analysis research.

Find a supervisor that you resonate with

- Supervisor is very important! You will be working with them for 2-3 years.
- My experience:
  - Introduced to Dr Chrysafis Andreou via common colleagues.
  - Discussed our expertise.
  - Discussed the general topic of breath analysis and found common ground.
  - Start developing your idea!

Start working on the application early

- As soon as you made the decision, start working on the application.
- Watch/attend webinars and talks on the topic.
- Write many drafts and keep track of them using a name system you understand.
- Follow the instructions!
- Be as critical as the evaluators!
- My experience:
  - I was working on the application for more than 5 months.
  - I had around 30 drafts organised by date.
  - Read the instructions countless times.



Final tips

- Be organised with your work!
- Pay attention to detail!
- Communicate honestly with yourself and supervisor! Build trust!
- Make the application fit your profile. MSCA is all about researcher development.
- Submit in time! You can submit multiple times!

Helpful Tips!

Good luck!

Christoforos Panteli **MEng & ACGI, PhD** cp2011@imperial.ac.uk

Mixed Signal Electronics, Biomedical devices and systems, Microfabrication | Ex-special forces lieutenant

Member IEEE, Institute of Engineering and Technology, Electrochemical Society

Reviewer in IEEE Sensors Journal

PhD in Graphene-inspired gas and pH sensors Imperial College London

MEng and ACGI Electrical & Electronic Engineering Imperial College London

Lecturer on Electronic Devices at undergraduate and master level Imperial College London

Research student supervisor Imperial College London