



**UNSW**  
SYDNEY



## Biosensors and Ingestible Sensors

**Research in the fields of materials sciences, electronics, and transducers, especially work on two-dimensional semiconductors, ingestible sensors and liquid metals.**

### Competitive advantage

- Unique and award-winning knowledge in the development of biosensors for gut disorders
- World renowned in the field of sensors
- Invention of an ingestible chemical sensor; a human gas sensing capsule
- Developed the concept of using plasmonic biosensors based on two dimensional systems
- Many years of experience in developing bio systems based on dielectrophoretic units

### Impact and successful outcomes

- Successfully carried out projects for the development of medical devices and continued with investigating their performance and clinical outputs in the fields of gastroenterology for the measurements of biogases, metabolites, assessment of microbiome and diet impact
- Translational research: devices are now used in a number of industries and by reputed companies for gas and bio sensing as well as components of microfluidics
- Created the first biosensors using two dimensional materials other than graphene

### Capabilities and facilities

- Centre for Advanced Solid and Liquid Electronics and Optics (CASLEO)
- PC2 Lab
- Class 10000 fabrication lab
- Optics lab
- High precision electronics lab
- CASLEO specific wet chemistry lab

### Our partners

- Planet Innovation Ltd
- Atmo Biosciences Ltd
- Department of Agriculture, Australia
- Department of Industry, Innovation and Science, Australia

### More Information

Professor Kourosh Kalantar-Zadeh

ARC Laureate Fellow and Director of the Centre for Advanced Solid and Liquid Electronics and Optics (CASLEO)

T: +61 (0) 488 332 245

E: [k.kalantar-zadeh@unsw.edu.au](mailto:k.kalantar-zadeh@unsw.edu.au)

UNSW Knowledge Exchange

[knowledge.exchange@unsw.edu.au](mailto:knowledge.exchange@unsw.edu.au)

[www.capabilities.unsw.edu.au](http://www.capabilities.unsw.edu.au)

+61(2) 9385 5008