

EMILY GAMBLÉN

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CURRENT EMPLOYMENT

- **Lancaster University** *September 2019 - present*
PhD Candidate in **Nanoscience** - Graphene NowNano CDT
Postgraduate Teaching Assistant, Postgraduate Committee Representative & Outreach Ambassador

SKILLS

- **Device and materials characterisation** with AFM, Raman spectroscopy, SEM, low-temperature electronic characterisation in a commercial dilution refrigerator and commercial helium evaporation cryostat, including use of superconducting magnet
- **Clean room** and other scientific **device fabrication** including optical lithography (especially laser writing), device design and mechanical exfoliation of 2D materials
- **Python** for data handling, analysis, graphing and numerical simulation, **L^AT_EX**, **html**
- Native **English** speaker, basic **French** (GCSE) and **Chinese (Mandarin)** (Confucius Institute)

PROJECTS AND EXPERIENCE

- **Using 2D Materials-Based Sensors to Measure Magnetism in 2D Materials** *2020 - present*
PhD Project
 - Supervised by Dr Jonathan Prance and Dr Michael Thompson (Lancaster University Physics Dept.)
 - In collaboration with Dr Roman Gorbachev (National Graphene Institute, University of Manchester)
- **Postgraduate Representative** *2020 - present*
 - Acting representative for all postgraduate research students in the department for both the Student-Staff Consultative Committee and the Physics Staff Advisory Committee
 - Involves liaising with all postgraduate researchers and acting as an arbitrator between the student body and the departmental administration
- **Postgraduate Teaching Assistant** *2020 - present*
 - Teaching responsibilities (including solo teaching) and marking coursework and presentations from a range of university levels, from first year introductory courses to the advanced semiconductor lasers course offered to final year MPhys students
- **2D Conference Organising Committee** *2021 - 2022*
<https://www.2dconference.co.uk/>
 - Responsible in collaboration with the other committee members for timetabling, venue, sign-up, sponsorship and transport for 2D Conference 2022, with over 100 participants plus invited speakers and exhibitors
- **MPhys Project** *October 2018 - March 2019*
Investigating Development of a New Plastic Dilution Refrigerator
 - Development of research skills and gaining experience of the operation and cooling mechanisms of commonly used ultra-cold refrigeration methods including the basics of magnetic and dilution refrigerators
 - Produced a prototype design for and investigated the practical feasibility of a miniature plastic dilution refrigerator.

PRESENTATIONS AND PRIZES

- **2D Superconductors: Do they levitate?**

27-03-2023

talk for:

Faculty of Science and Technology PhD Speed Talk Competition **winner**

- **Exploring Applications of Graphene-Based Josephson Junctions**

poster presented at:

- 29th International Conference on Low Temperature Physics, Sapporo 18-24 Aug 22
- International Conference on Ultra Low Temperature Physics, Otaru 25-28 Aug 22
- CMD-29 (IOP Condensed Matter Division)(remote) 21-26 Aug 22

- **Investigating Properties of 2D Materials Using 2D Materials-Based Sensors**

poster presented at:

- Advanced European School on Cryogenics Cryocourse 20-18 Sept 21
- 2D Conference 2022 27-30 June 22

EDUCATION AND TRAINING

- **Mandarin Chinese Language Course**

2022 - present

Convened by Lancaster University Confucius Institute

- Level 1 and 2 complete, Level 3 upcoming

- **Condensed Matter Group Postgraduate Lectures**

2021 - present

Offered by the Condensed Matter Physics group at Lancaster University

- These lectures cover a wide range of topics in short 5-week courses, from advanced condensed matter theory to practical electronics to using blender to generate 3d images to scientific programming skills

- **Commercialisation and Innovation Course**

2022

Offered by Graphene NowNano CDT in collaboration with the University of Manchester Business School

- Focused on pitching to a business audience for scientific start-up enterprise

- **Advanced European School on Cryogenics Cryocourse**

20-28 Sept 2021

- Provided by the European Microkelvin Platform to facilitate international education and collaboration in the fields of low temperature physics and cryogenics

- **NowNano CDT Training**

2019 - 2020

- Theoretical training and practical labs in fabrication and characterisation techniques of 2D materials, as well as broader lectures in ongoing research in other related fields, such as biophysics and medicine

- **MPhys Physics Hons**

2015 - 2019

Lancaster University, Lancaster, UK

2i (Upper 2nd Class)

- Including courses in fluid dynamics, quantum information processing, low temperature physics and semiconductor devices

- **Secondary Education**

2008 - 2015

Oldham Hulme Grammar School, Oldham, UK

- A-levels in Biology, Maths, Physics, Gen. Studies, Further Maths, Chemistry **AAAABb**
- 10 GCSEs including English(**A***), Maths(**A***), French(**A**) and Sciences(**A***) **A* - B**