



**Northumbria
University**
NEWCASTLE

EUREC Masters Starting Day

Photovoltaics Specialisation

Northumbria University
Newcastle upon Tyne, UK

Northumbria University and Newcastle

- Northumbria University is the largest university in the North East of England and is located in the city centre of Newcastle upon Tyne.
- Northumbria has over 30,000 students from more than 130 countries
- Newcastle is a “student city” with two major universities and several colleges
- There is an international airport, rail links to the rest of the UK and a wide range of sporting, retail and entertainment opportunities.



PV Specialisation

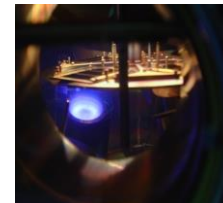
- The PV specialisation is delivered by staff from the Department of Mathematics, Physics and Electrical Engineering
- The PV course has three modules, worth 10 ECTS each
- The modules are taught in parallel across the semester, with typically 4 hours of lectures per module per week, plus laboratory sessions and seminars
- The curriculum covers the wide range of topics that makes up photovoltaics, from the design and manufacture of the cells themselves through to their implementation in PV systems for a variety of applications
- The aim is to produce graduates who can contribute to all parts of the PV supply chain and understand the links between them

PV Specialisation - Modules

- **Photovoltaic Cell Technology:** solar cell materials, device design, manufacture, characterisation and solar cell development
- **Photovoltaic System Technology:** system components, grid-connected and stand-alone systems, operation and maintenance, performance analysis and optimisation
- **Photovoltaic Development and Implementation:** research directions in cell and system design, advanced characterisation methods, economic and environmental impact assessment, policies for development and implementation

PV Specialisation

- The PV specialisation takes place in Semester 2 at Northumbria, which runs from 28th January to 31st May 2019
- The spring break is from 8th April to 26th April – no classes in this period
- We are aware that the specialisation overlaps with the last period of some of the core studies and make arrangements to allow students to arrive when possible
- Alongside our teaching activities, the University has an active research group in photovoltaics, in the following areas:
 - Thin film PV materials and cells based on chalcopyrite and kesterite materials
 - Design and performance assessment of grid connected PV systems
 - Environmental impact assessment for PV manufacturing processes
 - Technical and socio-economic studies of PV potential and the routes to widespread implementation
- Students will have the opportunity to interact with the researchers to get an insight into the latest developments



The Photovoltaics Specialisation – projects and beyond

- Most of our students carry out a project in the PV area, although this ranges from research into cell materials to evaluation of installed systems
- Students work with research institutes or companies and past project providers have included the AIT, Fraunhofer Institute for Solar Energy, 3E, Ersol, Isofoton, Phoenix Solar and IMEC
- The PV market has shown remarkable growth over the last ten years, with significant growth now in markets beyond Europe (especially China, USA, Middle East/North Africa and South America)
- Some of our project students find employment with their project provider in the first instance and some move on to other companies in the sector. Some students choose to enter PhD studies after their course.

Administration and Accommodation

- The University campus is in the centre of the city of Newcastle, close to shops, restaurants and transport links (see campus map on web site)
- All PV specialisation students are registered on our MSc programme and have full access to the University facilities, including the library and sports centre – there are no additional campus fees (*fees might apply for some optional leisure and sports activities*)
- PV specialisation students from outside Europe will require a UK student visitor visa in order to study at Northumbria – we will provide a letter of support for the visa application - you can apply in the country in which you are studying the core semester, up to 3 months before you travel
- We recommend starting to look for accommodation as early as you can – the University has an Accommodation Office (see the University web site) where you can access information (you will need a student number, which we will supply, before you can apply for University accommodation)

Around the location!

Hadrian's Wall



The "New Castle"

The Angel of the North



The Quayside



Dunstanburgh

We are looking forward to welcoming the PV specialisation students to Northumbria University and to the north east of England



Thank you

Contact Details

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- PV specialisation:
<http://www.master.eurec.be/en/Partnering-Universities/Spe-Photovoltaics-Univ-of-Northumbria-UK/>