

Vak: Specialisation Photovoltaics (Northumbria)

credits: 30

Vakcode	ZVWH2SPV	Werkvormen	Onderwijs
Naam	Specialisation Photovoltaics (Northumbria)	Toetsen	Spec.Photovoltaics - Overige toetsing
Studiejaar	2021-2022		
ECTS credits	30		
Taal	Engels		
Coördinator	C.B. Vogt		

Leeruitkomsten

The student will

- ♦ be able to discuss the properties of semiconductors which are important for PV applications.
- ♦ be able to describe the important PV devices.
- ♦ have a good understanding of semiconductors in equilibrium and non-equilibrium situations, homojunction and heterojunction solar cell devices and the differences between ideal and real devices.
- ♦ understand the need for purity and minimisation of crystal imperfections for making high performance devices.
- ♦ be able to describe and discuss the pros and cons of bulk crystal growth, epitaxial and low cost thin film deposition methods.
- ♦ at an introductory level outline how to make important solar cell devices.

Students will be able to:

- ♦ discuss the principles of operation and design of PV devices.
- ♦ discuss the main fabrication methods for advanced PV devices.
- ♦ describe and use the main characterisation methods used with semiconductor materials and PV devices.

The student will:

- Be able to complete basic design of both stand alone and grid connected systems
- Understand the requirements for construction, electrical connection and operation of systems
- Have experience of analysing system performance

The students will:

- Have an understanding of the economics of photovoltaic systems and their comparison with other electricity sources
- Be able to perform an environmental impact assessment or energy analysis for a PV system

Inhoud

Contents:

1. Cell and Module Technology
2. Advanced Cell Design
3. Photovoltaic System Technology
4. Economics, Policy and Environment

Opgenomen in opleiding(en)

European Master in Renewable Energy

School(s)

Instituut voor Engineering

share your talent. move the world.