

## Solar Energy

### Physics of photovoltaic conversion technologies and systems

Arnohm Smets, Klaus Jäger, Olindo Isabella, René van Swaaij and Miro Zeman

#### Keynote

A comprehensive text book for undergraduates and graduates studying solar technologies.

#### Description

This book uniquely covers both the physics of photovoltaic (PV) cells and the design of PV systems for real-life applications.

- Fundamental principles of semiconductor solar cells.
- PV technology: crystalline silicon solar cells; thin-film cells; PV modules; third-generation concepts.
- PV systems, from simple stand-alone, to complex systems connected to the grid; components; design; deployment; performance.

The book is an invaluable reference for researchers, industrial engineers and designers working in solar energy generation. The book is also ideal for university and third-level physics or engineering courses on solar photovoltaics, with exercises to check students' understanding and reinforce learning. It is the perfect companion to the Massive Open Online Course (MOOC) on Solar Energy (DelftX, ET.3034TU) presented by co-author Arno Smets. The course is available in English on the nonprofit open source edX.org platform, and in Arabic on edraak.org. Over 100,000 students have already registered for these MOOCs.

#### Audience

This book is perfect for anyone studying solar photovoltaics at undergraduate and masters level:

- *Sustainable Energy - without the hot air*, MacKay
- *Photovoltaics: Fundamentals, Technology and Practice*, Mertens
- *Photovoltaic Solar Energy Conversion*, Bauer

#### Sales and Marketing Highlights

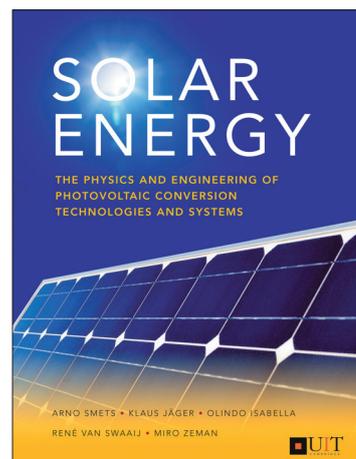
- Recommended reading for all students studying photovoltaics at Delft University.
- Contains questions for testing students' knowledge.
- Ideal for people who are taking part in online courses as well as traditional study.
- Tied to Massive Open Online Course with over 100,000 registrations.
- E-book available for free across all platforms

#### Contents

- PV Fundamentals
- PV Technology
- PV Systems
- Alternative solar energy conversion technologies
- Appendix

#### The Authors:

The authors all teach and research physics at the University of Delft in the Netherlands. They are prominent in the field of solar photovoltaics and are passionate about the development of sustainable energy systems for a greener future.



**Published:** 4th February 2016  
**ISBN:** 9781906860325  
**Format:** 241mm x 184mm  
**Binding:** Paperback  
**Extent:** 496pp  
 In full colour  
**RRP:** £24.99  
**BIC Code:** PHFC, THX  
**BISAC:** SCIO77000, TEC010000, TEC031010  
**Audience:** Academic

#### Publisher

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