Course guides
230361 - SCD - Solar Cells for Dummies

Unit in charge: Barcelona School of Telecommunications Engineering
Teaching unit: 710 - EEL - Department of Electronic Engineering.

Degree: MASTER'S DEGREE IN ELECTRONIC ENGINEERING (Syllabus 2013). (Optional subject).
MASTER'S DEGREE IN TELECOMMUNICATIONS ENGINEERING (Syllabus 2013). (Optional subject).

Academic year: 2021  ECTS Credits: 2.5  Languages: English

LECTURER
Coordinating lecturer: Joaquim Puigdollers
Others: Joaquim Puigdollers

DEGREE COMPETENCES TO WHICH THE SUBJECT CONTRIBUTES

Specific:
CEE12. Ability to use semiconductor devices taking into account their physical characteristics and limitations.
CEE24. Ability to identify and evaluate innovative ideas and products in the area of electronic technology.

Transversal:
CT3. TEAMWORK: Being able to work in an interdisciplinary team, whether as a member or as a leader, with the aim of contributing to projects pragmatically and responsibly and making commitments in view of the resources that are available.

TEACHING METHODOLOGY

LEARNING OBJECTIVES OF THE SUBJECT

At the end of the course the student will understand the principles of operation of any kind of solar cell.
Solar cells based on organic semiconductors and perovskites materials will be described with more detail.

STUDY LOAD

<table>
<thead>
<tr>
<th>Type</th>
<th>Hours</th>
<th>Percentage</th>
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</thead>
<tbody>
<tr>
<td>Hours large group</td>
<td>20,0</td>
<td>32.00</td>
</tr>
<tr>
<td>Self study</td>
<td>42,5</td>
<td>68.00</td>
</tr>
</tbody>
</table>

Total learning time: 62.5 h
CONTENTS

The use of selective contacts in solar cells

Description:
1: Solar Cell: absorber + selective contacts
2: Photocurrent from the perspective of the transmission
3: First example: Excitonic devices (Organic solar Cells and OLEDs)
4: Second example: Perovskite solar cells
5: Technology. Including a visit to Clean Room facilities

Specific objectives:
To introduce students to the technology of photovoltaic devices. Understand the principles of operation of solar cells.

Full-or-part-time: 20h 30m
Laboratory classes: 8h 30m
Guided activities: 1h
Self study: 11h

GRADING SYSTEM

BIBLIOGRAPHY

Basic: