

Modulbezeichnung: Solar Energy Conversion (EnMat-2) 5 ECTS
(Solar Energy Conversion)

Modulverantwortliche/r: Dirk Guldi
Lehrende: Dirk Guldi

Startsemester: WS 2020/2021 Dauer: 1 Semester Turnus: jährlich (WS)
Präsenzzeit: 45 Std. Eigenstudium: 105 Std. Sprache: Englisch

Lehrveranstaltungen:

Solar Energy Conversion (2V + 1S):

Solar Energy Conversion (WS 2020/2021, Vorlesung mit Übung, 3 SWS, Dirk Guldi)

Inhalt:

- Demand and supply of energy
- Solar cells:
 1. Silicon solar cells
 2. dye-sensitized solar cells
 3. organic solar cells
 4. perovskite solar cells
 5. singlet fission
- Fundamentals of Electron Transfer
- Photosynthesis: natural photosynthesis, artificial photosynthesis

Lernziele und Kompetenzen:

The students ...

- are familiar with the fundamentals and modern applications in solar energy research and applications
- understand design principles in solar energy devices and can transfer this knowledge to related topics
- can present, communicate and discuss scientific results with experts in English.

Verwendbarkeit des Moduls / Einpassung in den Musterstudienplan:

Das Modul ist im Kontext der folgenden Studienfächer/Vertiefungsrichtungen verwendbar:

[1] **Molecular Science (Master of Science)**

(Po-Vers. 2020w | NatFak | Molecular Science (Master of Science) | Compulsory elective module | Advances in Energy Materials | Solar Energy Conversion)

[2] **Molecular Science (Master of Science)**

(Po-Vers. 2020w | NatFak | Molecular Science (Master of Science) | Elective modules | Solar Energy Conversion)

Studien-/Prüfungsleistungen:

Solar Energy Conversion (Prüfungsnummer: 65431)

Prüfungsleistung, Klausur, Dauer (in Minuten): 60

Anteil an der Berechnung der Modulnote: 100%

weitere Erläuterungen:

W60(PL): written examination (60 min) or alternative examination according FAU Corona Statutes!

Prüfungssprache: Englisch

Erstablesung: WS 2020/2021, 1. Wdh.: WS 2020/2021

1. Prüfer: Dirk Guldi

Organisatorisches:

Please note:

- "Solar Energy Conversion" will be taught only in winter term.
- Students have to register for the module (check registration periods)!
- Registration/further information via StudON

Bemerkungen:

- Within the Compulsory Elective Module "Advances in Energy Materials" MSc Chemistry and Molecular Science
- Module can be taken as part of the Elective Module, too!