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

Modulverantwortliche/r: Dirk M. Guldi
Lehrende: Dirk M. Guldi

Startsemester: WS 2021/2022	Dauer: 1 Semester	Turnus: jährlich (WS)
Präsenzzeit: 45 Std.	Eigenstudium: 105 Std.	Sprache: Englisch

Lehrveranstaltungen:

Solar Energy Conversion (2V + 1S):

Solar Energy Conversion (WS 2021/2022, Vorlesung mit Übung, 3 SWS, Dirk M. 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.
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Verwendbarkeit des Moduls / Einpassung in den Musterstudienplan:

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

[1] Chemistry (Master of Science): ab 1. Semester

(Po-Vers. 2020w | NatFak | Chemistry (Master of Science) | Ergänzende Wahlpflichtmodule | Advances in Energy Materials | Solar Energy Conversion)

[2] Chemistry (Master of Science): ab 1. Semester

(Po-Vers. 2020w | NatFak | Chemistry (Master of Science) | Wahlmodule | Solar Energy Conversion)

[3] Molecular Science (Master of Science): ab 1. Semester

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

[4] Molecular Science (Master of Science): ab 1. Semester

(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

Erstblegung: WS 2021/2022, 1. Wdh.: WS 2021/2022

1. Prüfer: Dirk M. 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!