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

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

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

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**Lehrveranstaltungen:**

**Solar Energy Conversion (2V + 1S):**

Solar Energy Conversion (WS 2021/2022, Vorlesung mit Übung, 3 SWS, Dirk M. Guldi)

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**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)

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**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

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**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!