Modulbezeichnung:	**Materials and devices for opto-electric and energy technologies (GRK2495-Lecture)** (Materials and devices for opto-electric and energy technologies)	**5 ECTS**
Modulverantwortliche/r:	Christoph J. Brabec, Masashi Kato	
Lehrende:	Masashi Kato, Christoph J. Brabec	

Startsemester: WS 2020/2021	Dauer: 1 Semester	Turnus: unregelmäßig
Präsenzzeit: 90 Std.	Eigenstudium: 60 Std.	Sprache: Englisch

Lehrveranstaltungen:

Seminar on the basis of the Int. Conference on Next Generation Solar Energy (NGSE5) (WS 2020/2021, Vorlesung, 3 SWS, Christoph J. Brabec)
Electronic Materials Analysis (WS 2020/2021, Vorlesung, 3 SWS, Masashi Kato)

Empfohlene Voraussetzungen:

bachelor studies a suitable subject

Inhalt:

The FAU-NITech lecture series where Professors co-teach a module of two interdisciplinary graduate level lectures is organized by the International Doctoral Program GRK2495 Energy Conversion Systems. This module (5ECTS) consists of 2 lectures "Seminar on the basis of the Internat. Conference on Next Generation Solar Energy (NGSE59" from Prof. Brabec and "Electronic Materials Analysis" from Prof. Kato

Lernziele und Kompetenzen:

Novel research, concepts, and developments in photovoltaics will be discussed and advantages, the current trends in relation to different materials, namely perovskites, organic materials, light-absorbing dyes, quantum dots, and tandem / multi-junction solar cells offer will be analyzed. Theory and practice of electronic materials characterization and analysis based on the case of semiconductors will be introduced. Characterization and analysis techniques for semiconductors can easily be applied to other electronic materials, and the techniques are powerful tools to know properties of the electronic materials.

Literatur:

"Semiconductor Material and Device Characterization" by Schroder, D. Wiley-IEEE Press, c2006

Studien-/Prüfungsleistungen:

Materials and devices for opto-electric and energy technologies (Prüfungsnummer: 42621)
(englische Bezeichnung: Essay/Presentation on individual topics)

Prüfungsleistung, mehrteilige Prüfung
Anteil an der Berechnung der Modulnote: 100%
weitere Erläuterungen:
Both lectures require a small examination - a small presentation and a short essay.
Prüfungssprache: Englisch

Erstablegung: WS 2020/2021, 1. Wdh.: keine Wdh.
1. Prüfer: Christoph J. Brabec

Organisatorisches:

Both lecture contents of this module are provided on studon https://www.studon.fau.de/cat3069794.html (Angebote-Forschungseinrichtungen-Graduiertenkolleg 2495: Energiekonvertierungssysteme-Block Lectures)
Anmeldung über meincampus, studon oder julia.b.berger@fau.de
Geeignet für Masterstudierende aus: EEI, ET, MWT, NT, MAP, CE, MB, ME, WING