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**Modulbezeichnung:** Physical Chemistry - Lab (CM-PC-Lab) 10 ECTS  
(Physical Chemistry - Lab)

Modulverantwortliche/r: Dirk M. Guldi  
Lehrende: Assistenten, Guido Sauer

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Startsemester: WS 2021/2022	Dauer: 1 Semester	Turnus: halbjährlich (WS+SS)
Präsenzzeit: 225 Std.	Eigenstudium: 75 Std.	Sprache: Englisch

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#### Lehrveranstaltungen:

- Attendance at lab-course is compulsory!
- Attendance at safety instruction is compulsory!
- Attendance in winter or summer term possible!
- A valid laboratory insurance is mandatory for participation in the lab course - see: [www.laborversicherung.de](http://www.laborversicherung.de)

Physical Chemistry - Lab (WS 2021/2022, Praktikum, 15 SWS, Guido Sauer et al.)

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#### Inhalt:

- Practical introduction to current and state-of-the-art research topics in the field of physical chemistry
- Advanced spectroscopic and image analysis
- Guided work on current research projects using methods of physical chemistry
- Documentation of experimental results

The practical part comprises 8 days in the physicochemical advanced practical course lab and, in addition, two 3-day practical projects in two different working groups of physical chemistry. The 3-day internships may be extended after consultation with the internship coordinator and the working group (in return the number of experiments in the practical lab course can be reduced).

#### Lernziele und Kompetenzen:

Students ...

- apply fundamental knowledge of physical chemistry to particular topics in research
- develop model-like descriptions for complex systems and model experimental data
- discover various modern experimental techniques and apply them systematically in practice
- apply and transfer knowledge acquired during their studies to handle and solve open questions in research projects in physical chemistry
- perform experiments/measurements, record and evaluate their results in appropriate scientific form and interpret results independently
- present their own results and acquired knowledge in an appropriate scientific style in English language in oral and written form
- evaluate the basic safety matters in handling hazardous materials and complex apparatus

#### Literatur:

- P. Atkins, J. De Paula, Atkins' Physical Chemistry, 10th edition, Oxford University Press, Oxford, 2014
  - Literature references provided in the guidelines of each experiment
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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) | Fachliche Wahlpflichtmodule | Physical Chemistry | Physical Chemistry laboratory)

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

(Po-Vers. 2020w | NatFak | Chemistry (Master of Science) | Ergänzende Wahlpflichtmodule | Physical Chemistry | Physical Chemistry laboratory)

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#### Studien-/Prüfungsleistungen:

Physical Chemistry Laboratory (Prüfungsnummer: 65061)

Prüfungsleistung, Praktikumsleistung

Anteil an der Berechnung der Modulnote: 100%

weitere Erläuterungen:

SeL: Poster presentation, 20 - 30 min

Prüfungssprache: Englisch

Erstablingung: WS 2021/2022, 1. Wdh.: SS 2022

1. Prüfer: Guido Sauer

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### Organisatorisches:

#### Please note:

- Students have to register for the module (check registration periods)
- Lab course is held as an in-class-course
- Lab course can be chosen in winter or summer term
- Time and place by appointment
- Registration/further information available on studon [https://www.studon.fau.de/crs397438\\_\\_join.html](https://www.studon.fau.de/crs397438__join.html)

### Bemerkungen:

#### Module compatibility:

- Lab module within the **Core module „Physical Chemistry“** in M. Sc. Chemistry
- Lab module within the **Compulsory Elective Module** in M.Sc. Chemistry (if not chosen as Core module) or M. Sc. Molecular Science