Modulbezeichnung: **Interfaces and Catalysis - Lab (IntCat-Lab)** **5 ECTS**
(Interfaces and Catalysis - Lab)

Modulverantwortliche/r: Jörg Libuda
Lehrende: Christian Papp, Julien Bachmann, Jörg Libuda, Bernd Meyer

Startsemester: SS 2021	Dauer: 1 Semester	Turnus: halbjährlich (WS+SS)
Präsenzzeit: 105 Std.	Eigenstudium: 45 Std.	Sprache: Englisch

Lehrveranstaltungen:

- Attendance in lab course is compulsory!
- Attendance at safety instructions 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

Interface & Catalysis LAB (SS 2021, Praktikum, 7 SWS, Jörg Libuda et al.)

Inhalt:

- 10 working days in lab, data analysis and written report
- Practical introduction to state-of-the-art research in the fields of surface science, interface science, heterogeneous catalysis, and electrocatalysis.
- Guided work on a current research project in a research group of your choice.
- Research topics may cover spectroscopy at surfaces, microscopy at surfaces, in-situ or operando spectroscopy, characterization of catalytic materials, in-situ methods in electrocatalysis, preparation and characterization of nanomaterials, modelling and simulation of interfaces and nanomaterials or similar.
- Documentation of experimental results in form of a written report.
- Please approach one of the research groups at the Department of Chemistry and Pharmacy which is active in the field of interface science, interface controlled materials, heterogeneous catalysis and electrocatalysis, nanomaterials characterization, or modelling and simulation of processes at interfaces. Time and place by appointment.

Lernziele und Kompetenzen:

- Understanding how to get familiar with the current state-of-knowledge for a specific research topic.
- Application of fundamental knowledge of physical chemistry to a specific research topic.
- Understanding and testing model-like descriptions for complex physicochemical problems.
- Operation of complex state-of-the-art instrumentation.
- Getting in contact with development of new methodologies to answer open questions in interface science and catalysis.
- Learning how to analyze data with state-of-the-art methodologies.
- Learning how to record, document, and analyze research data in in appropriate form.
- Learning how to present and discuss experimental results and develop interpretations.
- Learning how to present own results in written form and scientific style English language.

Verwendbarkeit des Moduls / Einpassung in den Musterstudienplan:

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

[1] **Chemistry (Master of Science)**
(Po-Vers. 2020w | NatFak | Chemistry (Master of Science) | Ergänzende Wahlpflichtmodule | Advances in Interface Research and Catalysis | Interfaces and Catalysis - Lab)

[2] **Molecular Science (Master of Science): ab 1. Semester**
(Po-Vers. 2020w | NatFak | Molecular Science (Master of Science) | Compulsory elective module | Advances in Interfaces and Catalysis | Interfaces and Catalysis - Lab)

Studien-/Prüfungsleistungen:

Interfaces and Catalysis - Lab (Prüfungsnummer: 65341)
Prüfungsleistung, Praktikumsleistung
Anteil an der Berechnung der Modulnote: 100%
weitere Erläuterungen:
Graded Lab Protocol of 30 - 50 pages (plus raw data documentation)
Prüfungssprache: Englisch

Erstablegung: SS 2021, 1. Wdh.: WS 2021/2022
1. Prüfer: Jörg Libuda

Organisatorisches:

Please note:

- Students have to register for the module examination (check registration periods)!
- Lab course is held as an in-class-course in one of the participating research groups!
- Registration/further information via StudOn!

Bemerkungen:

Module compatibility:

- the lab module is within the **Compulsory elective module "Advances in Interfaces and Catalysis"** and can only be taken as a whole!