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**Modulbezeichnung:** Catalysis (CME2) **15 ECTS**  
(Catalysis)

Modulverantwortliche/r: Hans-Peter Steinrück

Lehrende: Romano Dorta, Thomas Drewello, Hans-Peter Steinrück, Andriy Mokhir, Sjoerd Harder, Jörg Libuda, u.a., Svetlana Tsogoeva, Julien Bachmann

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Startsemester: SS 2019

Dauer: 2 Semester

Turnus: halbjährlich (WS+SS)

Präsenzzeit: 195 Std.

Eigenstudium: 255 Std.

Sprache: Englisch

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### Lehrveranstaltungen:

Please attend one **lab course** and choose one of the given **Options A - D**:

#### Lab course (7 LAB):

Attendance in lab course is compulsory!

Lab Course Catalysis (SS 2019, Praktikum, 7 SWS, Hans-Peter Steinrück et al.)

Lab Course Catalysis (WS 2019/2020, Praktikum, 7 SWS, Hans-Peter Steinrück et al.)

#### Lectures and seminars:

##### Option A:

Nanoparticles and Nanostructured Thin Films / Nanopartikel und nanostrukturierte dünne Schichten (WS 2019/2020, Vorlesung, 2 SWS, Julien Bachmann)

Nanoparticles and Nanostructured Thin Films / Nanopartikel und nanostrukturierte dünne Schichten - Seminar (WS 2019/2020, Seminar, Julien Bachmann)

Catalysis and Kinetics (SS 2019, Vorlesung, 2 SWS, Jörg Libuda)

Seminar Catalysis and Kinetics (SS 2019, Seminar, 1 SWS, Jörg Libuda et al.)

##### Option B:

Catalytic reactions with transition metals (SS 2019, Vorlesung, 2 SWS, Sjoerd Harder et al.)

Catalytic reactions with transition metals (SS 2019, Seminar, 1 SWS, Romano Dorta et al.)

Organocatalysis and catalytic reactions in water (SS 2019, Vorlesung, 2 SWS, Svetlana Tsogoeva et al.)

Organocatalysis and catalytic reactions in water - Seminar (SS 2019, Seminar, 1 SWS, Svetlana Tsogoeva et al.)

##### Option C:

Modern Methods in Mass Spectrometry (WS 2019/2020, Vorlesung, 2 SWS, Thomas Drewello)

Seminar Modern Methods in Mass Spectrometry (WS 2019/2020, Seminar, 1 SWS, Thomas Drewello et al.)

Catalytic reactions with transition metals (SS 2019, Vorlesung, 2 SWS, Sjoerd Harder et al.)

Catalytic reactions with transition metals (SS 2019, Seminar, 1 SWS, Romano Dorta et al.)

##### Option D:

Modern Methods in Mass Spectrometry (WS 2019/2020, Vorlesung, 2 SWS, Thomas Drewello)

Seminar Modern Methods in Mass Spectrometry (WS 2019/2020, Seminar, 1 SWS, Thomas Drewello et al.)

Catalysis and Kinetics (SS 2019, Vorlesung, 2 SWS, Jörg Libuda)

Seminar Catalysis and Kinetics (SS 2019, Seminar, 1 SWS, Jörg Libuda et al.)

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### Inhalt:

- developing the basics of catalysis at the level of a scientifically oriented Master's program
- introduction to the current issues of research in the field of catalysis
- deepening of knowledge in a specialized field of catalysis of lecturers involved in the ECRC to the limit of current knowledge
- experimental studies on selected chapters of catalysis at an advanced level

### Lernziele und Kompetenzen:

Students

- explain the basics of catalysis
- present and compare basics of different modern experimental or theoretical methods in catalysis
- apply basic knowledge to current issues in research

- analyse experimental data and interpret results referring to literature data independently
  - apply model-like descriptions for complex systems and model experimental data
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**Studien-/Prüfungsleistungen:**

Katalyse (Prüfungsnummer: 65401)

(englische Bezeichnung: Oral Examination or Examination (Klausur) on Catalysis)

Prüfungsleistung, mündliche Prüfung, Dauer (in Minuten): 45

Anteil an der Berechnung der Modulnote: 100%

weitere Erläuterungen:

Oral examination 45 min (O45), 2 examiners

Prüfungssprache: Englisch

Erstablingung: SS 2019, 1. Wdh.: WS 2019/2020

1. Prüfer: Julien Bachmann

1. Prüfer: Romano Dorta

1. Prüfer: Thomas Drewello

1. Prüfer: Svetlana Tsogoeva

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**Organisatorisches:**

O45 (PL) + LAB (SL)

**Bemerkungen:**

**Module compatibility:** M.Sc. Chemie / M.Sc. Molecular Science (as Mandatory Elective module or Elective module)