



Aalto University
School of Chemical
Technology

CHEM-E5205 P
Advanced Functional Materials
(5 cr)
Course info

Course Info

- Course is running during I-II periods (13.9 - 14.12.2018)
- Contents: New advanced functional materials; processing, properties and applications.
- Course consists of:
 - ❑ Lectures given at 14:15-16:00; the schedule and updates can be found in MyCourses
 - ❑ Tuesdays in lecture hall P1
 - ❑ Thursdays in lecture hall P1
 - ❑ Literature surveys and presentations on Thu. 29.11, P1
 - ❑ Examination 14.12 at 9-13 Ke1,
 - ❑ Next exam 21.2, register for the exam in Weboodi (<https://oodi.aalto.fi/a/>)

Course Info

- ❑ Responsible lecturer: prof. Simo-Pekka Hannula; simo-pekka.hannula@aalto.fi
- ❑ Lectures by S-P. Hannula and visiting lecturers
- ❑ Course assistant: Ilkka Penttinen (ilkka.penttinen@aalto.fi)
- ❑ Course material: Lecture handouts (MyCourses; <https://mycourses.aalto.fi/>)
- ❑ Prerequisites: Modules MT 201-2 and MT 301-3 (or corresponding)
- ❑ Registration: WebOodi, <https://oodi.aalto.fi/a/>
- ❑ Course information: MyCourses
- ❑ This course can be approved for post-graduate-studies
- ❑ All the lectures will be held in English
- ❑ Grading: 60% exam (extra points up to 2 from the presentation) and 40% from the literature work

Course Schedule CHEM-E5205 P

Week	Day	Time	Subject	Lecturer
38	Tue 18.9	14-16	Course info and orientation	Simo-Pekka Hannula (AU CHEM)
	Thu 20.9	14-16		
39	Tue 25.9	14-16	Shape memory alloys	Simo-Pekka Hannula (AU CHEM)
	Thu 27.9	14-16	3D-printing	Jouni Partanen (AU ENG)
40	Tue 2.10	14-16	Thermal spraying	Maria Oksa (VTT)
	Thu 4.10	16-18	TNTs, processing and applications	Saima Ali (ASM Microchemistry)
41	Tue 9.10	14-16	Surfaces in contact with water	Sami Franssila (AU CHEM)
	Thu 11.10	14-16	Ultrahard Coatings	Jari Koskinen (AU CHEM)
42	Tue 16.10	14-16	Superconductors	Iikka Penttinen (AU CHEM)
	Thu 18.10	14-16	Magnetic Materials	Oleg Hezcko (Acad. of Sci, Prague)
43			Exam period	
44	Thu 1.11	14-16	Sol-Gel Materials	Henrika Granbohm (Tikkurila Oyj)
45	Thu 8.11	14-16	Introduction to atomic layer deposition: principles, applications, future needs	Riikka Puurunen (AU CHEM)
46	Thu 15.11	14-16	Hole transport solar cell materials	Shima Moosakhani (AU CHEM)
47				
48	Thu 29.11	12-17	Presentations	Simo-Pekka Hannula (AU CHEM)
50	Fri 14.12	9-13	Exam	
	Thu 21.2	9-13	Exam	

Changes are possible, the updates can be found in
MyCourses

Literature survey and presentation

Literature survey (40%)

- The students can choose the subject from the list (appears to MyCourses next week)
- at least 12 A4 pages, single spacing, in English
- Should include at least the followed parts:
 - main page, abstract, list of contents, introduction, theoretical part, conclusions, references
- Theoretical part should include recent studies/results i.e. new information and references
- **Load the survey into Course Page at MyCourses , DL Sun. 25.11 !!!**

Presentation (0-2 p. added to exam result)

- Presentation for about **10 minutes**
- The presentation should be sent by email latest one day before presentation to ilkka.penttinen@aalto.fi
- 2-3 minutes time for questions
- Power point slides
 - E.g. main page, outlines, surveys itself, summary/conclusions, last page

Both can have a positive influence on the test results (max 2 p.)
