

ELEC-E9210 Organic Electronics: Materials,
Devices & Applications

Course Information



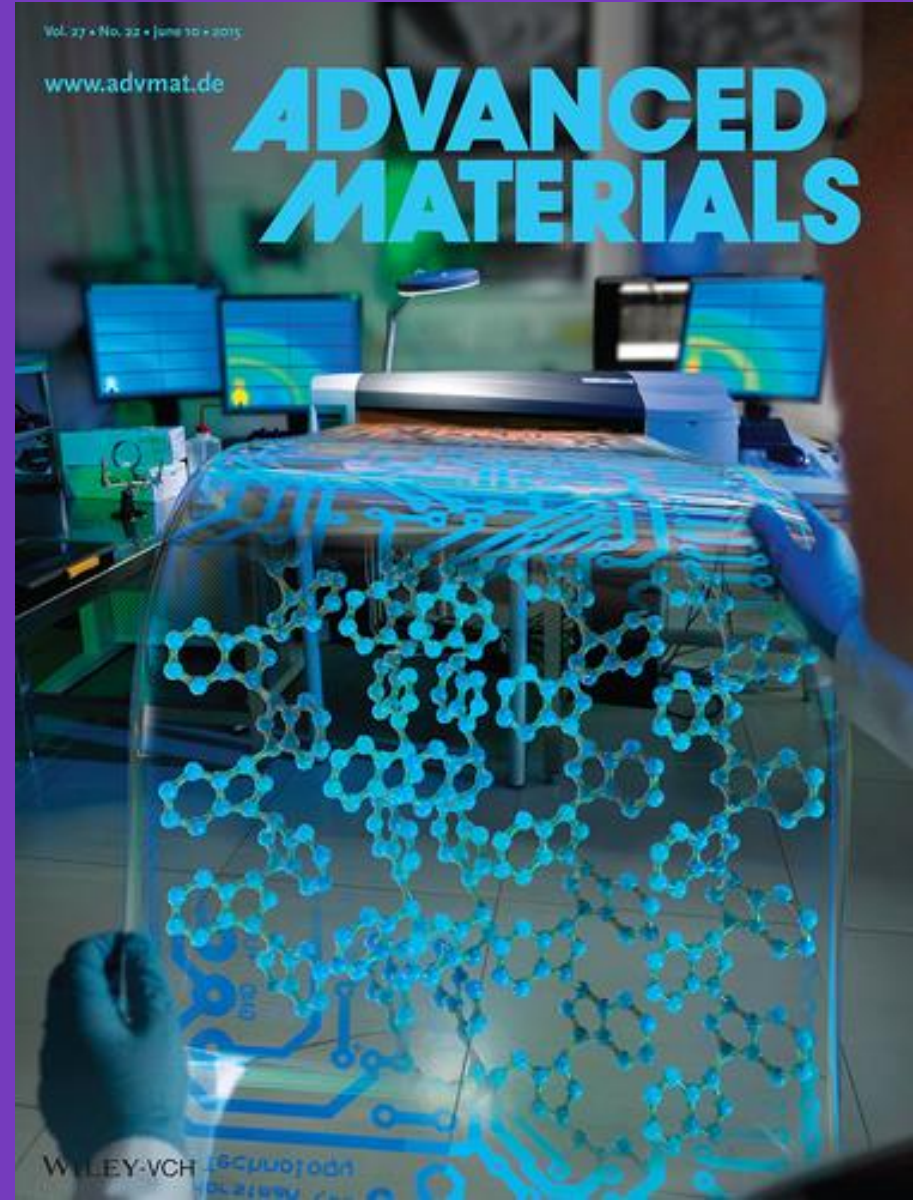
Aalto University
School of Electrical
Engineering

<https://organicelectronics.aalto.fi>

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ADVANCED MATERIALS



ELEC-E9210: Learning Outcomes

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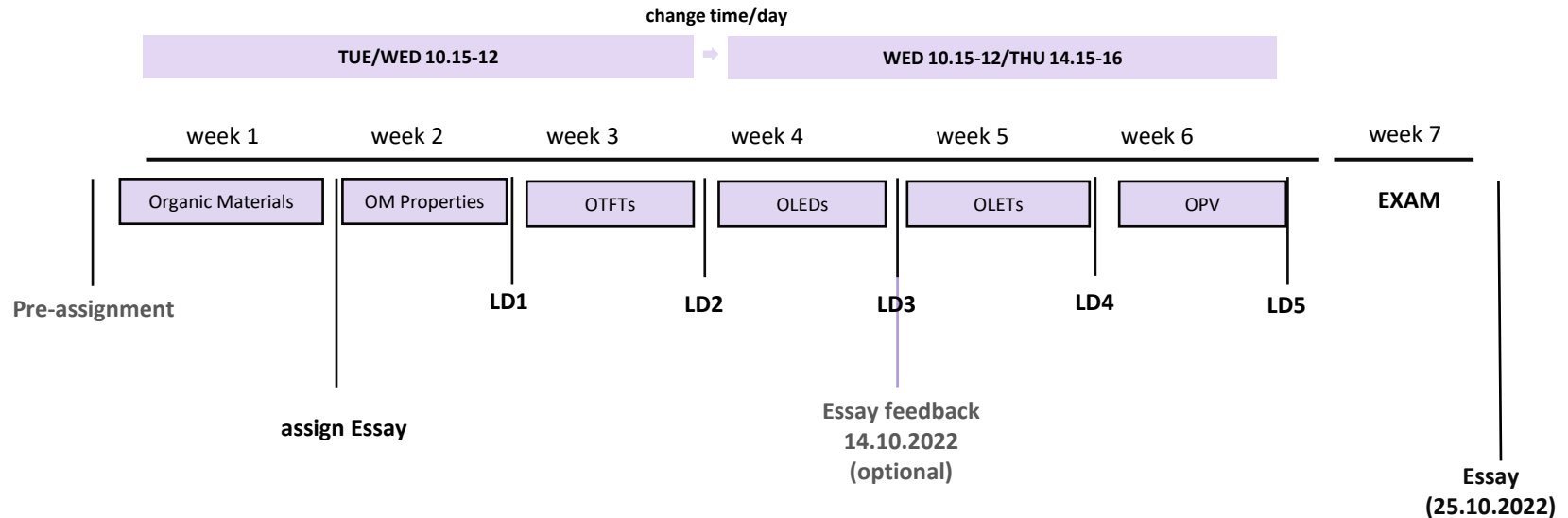
By the end of this course:

- You will learn about structure and properties of organic materials and devices, their functioning and properties, and field of applications.
 - Principle of organic materials (OMs)
 - Properties of OMs, including electronic and optical properties
 - Organic devices and working principles (*i.e.* transistors, diodes, sensors, solar cells)
 - Applications of organic materials and devices
- You will be capable of critically reading and understanding a scientific text, extrapolating main ideas, summarizing your readings and findings.
- You will experience how to write a scientific document.
- You will be capable of delivering and assess clear scientific communication.



ELEC-E9210: (Tentative) Timeline & Activity DLs

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Information & instructions will be available on MC
All DLs are h18.00 (MyCourses)

ELEC-E9210: Description of Assignments

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- **Learning Diary** Each student will write a Learning Diary on a weekly basis (starting from WK2). Each LD contains specific reflections on the classes and topic of that week.

DL is ALWAYS on FRIDAYS, h18.00

- **Essay** The essay focuses on one molecule. Please choose your molecule on the course. You can choose a molecule (but different from the molecule assigned to your group). Instructions to follow.

DL is h18.00 on 25.10.2022

DRAFT SUBMISSION: If you wish to receive feedback on your essay, please submit your draft. Draft can include preliminary draft, list of ideas, general outline, full draft or whatever you have written so far.

DL is h18.00 on 14.10.2022

- **Exam** We will have a discussion on some of the topics discussed during our lectures. The exam will mainly focus on theoretical concepts and aspects of organic materials and devices.

EXAM is on 20.10.2022



ELEC-E9210: Workload

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Assignment*	When	Workload	DL (ALWAYS h18.00)
Lectures	2/week	24h	
Learning Diary	Weekly (from wk2)	20h	on Fridays (from wk2)
Essay Draft	-	-	14.10
Essay	-	40h	25.10
Final Exam	-	40h	20.10
Total		124h	

*Please report how much time you have spent on preparing each assignment. This will help me assessing the real workload. Thanks!

ELEC-E9210: Grading

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Assignment	Points (max)
Learning Diary	20 (4/each)
Essay	40
Exam	40
Total	100
Extra point	
Pre-assignment	2
Oral Discussion*	20
Paper presentation*	20

* needs to be agreed with Caterina in advanced

Final grade scale:

- <50 = FAIL
- 50-60 = grade 1
- 61-71 = grade 2
- 72-81 = grade 3
- 82-92 = grade 4
- ≥ 93 = grade 5

EXTRA POINTS (on request/upon agreement)

- (Longer) Oral Exam (+20 minutes). Max 20 points.
- Paper presentation on one relevant topic from class. Max 20 points.

ELEC-E9210 Resources

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Recorded Lectures will be published on MyCourses on Friday, previous week. Lectures focus both on theoretical aspects as well as use and applications. These lectures should be studied beforehand and prior to class.

Slides (will be uploaded on MC before the class, so you can take notes during sessions)

- many slides contain reference to peer-reviewed scientific papers. All materials is referenced so you can retrieve the paper if looking forward for more detailed readings.

Books

- *Organic Field Effect Transistors - Theory, Fabrication and Characterization* I. Kysmissis, Springer (2009)
- *Physics of Organic Semiconductors* Wiley-VCH, edited by W. Brütting (2005)
- *Organic Electronics, Materials, Processing, Devices and Applications* ed. by F. So, CRC Press (2010)



Some More Info...

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- **ELEC-E9210 MC space** if you encounter any problem when submitting materials, or incorrect information on MyCourses, please let me know ASAP.
- Presence in not mandatory for this course.

