

<b>Course number</b>	U-LAS70 10002 SE50				
<b>Course title (and course title in English)</b>	ILAS Seminar-E2 :Introduction to Organic Electronics ( 初心者向け有機エレクトロニクス ) ILAS Seminar-E2 :Introduction to Organic Electronics	<b>Instructor's name, job title, and department of affiliation</b>	Institute for Chemical Research Senior Lecturer,MURDEY , Richard James		
<b>Group</b>	Seminars in Liberal Arts and Sciences	<b>Number of credits</b>	2	<b>Number of weekly time blocks</b>	1
<b>Class style</b>	seminar (Face-to-face course)	<b>Year/semesters</b>	2026 ・ First semester		<b>Quota (Freshman)</b> 25 (15)
<b>Target year</b>	Mainly 1st year students	<b>Eligible students</b>	For all majors	<b>Days and periods</b>	Tue.5
<b>Classroom</b>	31, Yoshida-South Campus Academic Center Bldg. North Wing			<b>Language of instruction</b>	English
<b>Keyword</b>	chemistry / physics / organic materials / semiconductors / molecules				

#### [Overview and purpose of the course]

Carbon-based molecules and polymers can behave as electrical insulators, conductors, or semiconductors, which makes them useful materials for electronics. In this seminar course, you will learn why certain molecules conduct electricity, how organic semiconductors are made, and how devices like organic solar cells and organic transistors work. The material is aimed at 1st and 2nd year students interested in learning about science in English. 3rd and 4th year students are also welcome. Seminars are presented in English. Discussion is in English and Japanese.

#### [Course objectives]

This seminar course will give students a general overview of the field of organic electronics.

#### [Course schedule and contents]

1. Introduction
2. Organic molecules and polymers - what makes them semiconductors?
3. Understanding electricity
4. Inorganic vs. organic materials
5. Energy and energy levels
6. Defects and imperfections
7. Fabrication methods
8. Some really basic electronics
9. In-class demo
10. What are electronic devices?
11. Solar cells
12. Lighting and displays
13. Transistors
14. The next frontier...
15. [no class]
16. Feedback

**[Course requirements]**

None

**[Evaluation methods and policy]**

Each lecture will introduce a short homework assignment related to the topic covered. These assignments count for 70% of the final grade. Attendance and class participation count for 30%.

**[Textbooks]**

Not used

**[References, etc.]**

( References, etc. )

Introduced during class

**[Study outside of class (preparation and review)]**

Weekly assignments reinforce key concepts introduced in the seminars.

**[Other information (office hours, etc.)]**

**[Essential courses]**