The City of Academia
"Sendai-Miyagi" Science Day 2010

WPI-AIMR opened a booth at “The City of Academia ‘Sendai-Miyagi’ Science Day 2010" held at Kawauchi North Campus in Tohoku University on July 11, 2010. About twenty elementary and junior high school students tried to make transistors using organic semiconductors and studied a cutting-edge research topic.
We would like to sincerely thank all attendees and visitors to this booth.

Everybody concentrates on making devices.

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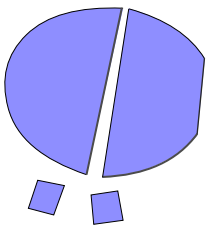
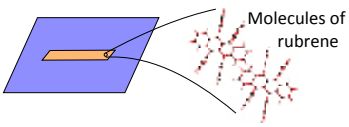
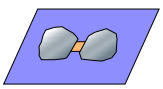
① Cleaving silicon wafer to prepare transistor substrates. Through this experience, the students learned crystals have directions easily cracked.



② Putting an organic semiconductor (rubrene) crystal on the silicon substrate. It is a knack to choose a thin crystal as much as possible.

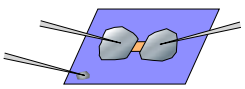


③



Making source and drain electrodes with silver paste. Please be careful not to make short-circuit between two electrodes.

④



Making contact with probes and measuring the transistor characteristics by the semiconductor device analyzer.

(The oxidized surface layer of the silicon substrate works as a gate insulator.)

Short lecture during the the silver paste drying

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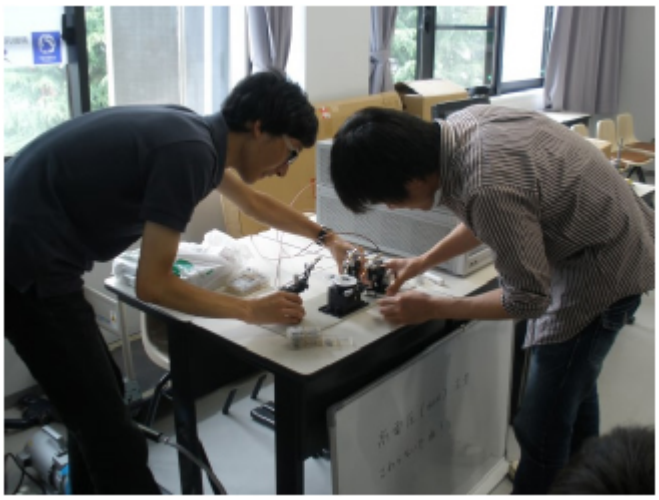
Let's measure the transistor characteristics.

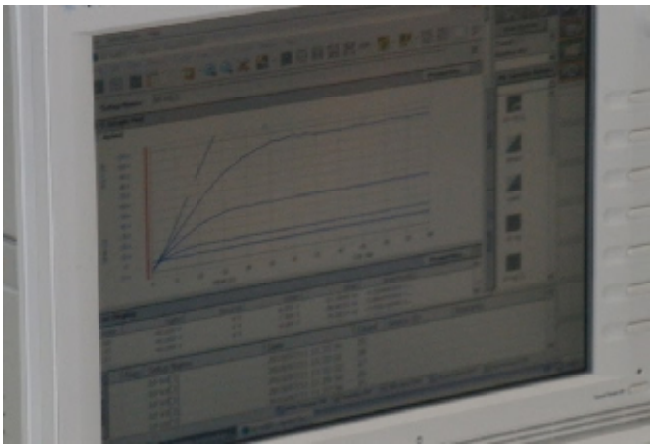
Preparation of the measurement



We are ready !

Silence before measurement

Wow, Good Transistor !



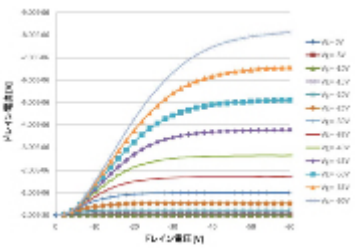
Let's make a transistor using organic semiconductor !

Aim: We will learn organic semiconductors by actually making the transistors.

Please enter the room any time!

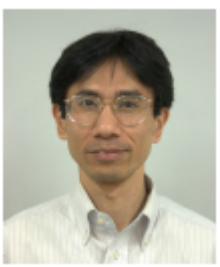
[1st]	[2nd]	[Time schedule]
10:00	13:30	Introduction of WPI-AIMR
10:05	13:35	Introduction of organic semiconductors
10:10	13:40	Cleaving a silicon wafer to make the substrate tips
10:30	14:00	Pasting the organic crystal (rubrene) on the substrate Lecture in crystal growth
10:50	14:20	Making electrodes by silver paste
11:10	14:40	Waiting till the paste will be dried. Lecture in the transistors. Demonstration of cleaving halite crystals.
11:30	15:00	Measuring the transistor characteristics
12:00	15:30	End of school

Handmade organic transistor



Current-Voltage diagram of the device

Guides in this school



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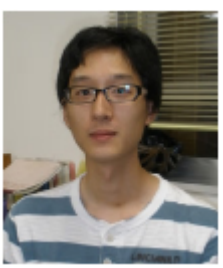

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