

FY 2019 Nanotech Career-up Alliance

Kyoto University, Advanced Course for Electron-beam Lithography

In the most-advanced semiconductor devices and MEMS, the requirement for nanoscale patterns have become important. The key technology to meet those requirement is the electron-beam lithography which can draw the fine patterns in the nanometer order.

This course is intended for intermediate participants of Electron-beam Lithography. The participants will learn the advanced knowledge about electron-beam lithography technologies through the designing complex devices by CAD, exposing the pattern (multilayer resist/superposition drawing) on silicon wafers with oxide film by the most-advanced electron-beam lithography equipment.

■ **Number of participants:** 3persons (maximum)

■ **Time and period:** From March 2 (Mon) to March 12 (Thu), 2020
4 days in total (lecture: 2 days [all participants]; practice: 2 days [individually])

■ **Venue:** Kyoto University Nanotechnology Hub (* Yoshida Campus, Kyoto University)
<http://www.nanoplat.cpier.kyoto-u.ac.jp/access/>

■ **Contents:**

Day 1 and Day 2 – March 2 (Mon) and March 3 (Tue)

[1] From the fundamentals to advanced knowledge of electron-beam lithography (lecture). For all the participants

*) The following schedule will be implemented for each participant for two consecutive days. Please note that the schedule is different for each participant. The specific schedule will be adjusted after the participation has been determined.

Day 3 – March 4 (Wed), March 9 (Mon) or March 11 (Wed)

[2] Pattern design by CAD

[3] Treatment before exposure – Photoresist application, etc. (practice)

[4] Drawing patterns using multilayer resist (practice)

Day 4 – March 5 (Thu), March 10 (Tue) or March 12 (Thu)

[5] High-precision superposition drawing (practice)

[6] Observation of drawing pattern by SEM (practice)

■ **Tuition:** 14,000 yen

■ **Contact:**

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