

# INSd Summer School 2026, Osaka-Tsukuba

## (Summer Lectures in 2026 on Nanotechnology/Nanoscience)

2 lectures: Live-hybrid (on site and on line)  
during July 21 and 31

R<sup>3</sup> Institute for Newly-Emerging Science Design, the University of Osaka, opens the INSd Summer School 2026 on Nanoscience and Nanotechnology, where two lectures are provided by live-hybrid and on-demand styles. This summer school is aimed at fostering international young talent in nanoscience and nanotechnology. Each set of lectures is composed of seven or eight classes during July 21<sup>st</sup> and 31<sup>st</sup>, 2026. In principle, lectures will be given as a live-hybrid (on site face-to-face and online) style. However, students can access the on-demand style lectures in case they cannot attend. These students should finish viewing a series of lectures during the specified period and are requested, just after each lecture, to submit the answer to the short question raised during each of lectures to ensure the attendance. Final examination of both lectures will be, in principle, executed as the live-hybrid style with the participation of the lecturers. ZOOM or Webex system will be used for hybrid and on-demand lectures. In this year, lecturers in the University of Osaka will give talks in person at Toyonaka campus. We strongly recommend all the students from the University of Osaka to participate in the lectures at the site (Toyonaka Co-Creation Building A at Toyonaka Campus). The lecture documents and recorded lectures will be uploaded to the homepage of R<sup>3</sup> center.

URL: <http://www.insd.osaka-u.ac.jp/>

### ■ Lecturers:

**Dr. Simon Chouteau, Dr. Pierre Vinchon, Dr. Nicolas Mauchamp, and Dr. Lucas Spiske**

(R3 Institute of Newly-Emerging Science Design, The University of Osaka)

**Prof. Marie D'angelo**

(Institute for NanoSciences of Paris, Sorbonne University, France)

Schedule and abstracts of lectures are shown on the second page.

■ **Lecture Room:** (Toyonaka Campus) R.N. 305, INSd Seminar Room, 3<sup>rd</sup> floor of Toyonaka Co-Creation Building A (Old Name: Interdisciplinary Research Building).

■ **Applicants:** Although the priority is given to graduate-school students who take “Graduate Minor Program or Graduate Program for Advanced Interdisciplinary Studies for Education, Research and Training on Nanoscience and Nanotechnology” (hereafter, nano-program), “Interactive Material Science Cadet Program”, “Multidisciplinary PhD Program for Quantum Beam”, and “Honors Program in Science, Engineering and Informatics”, there is plenty of room for other domestic and foreign graduate and undergraduate students and staff members are welcome. Homework exercises and final test (student presentation) will be imposed on graduate students who need credits. They are also requested to reply to short questions in case of on-demand lectures for the evidence of the viewing.

■ **Maximum number of topics and units of credit:** One unit of credit is given for International Exchange Lecture on Nanoscience and Nano-engineering B (Lecture by Dr. S. Chouteau et al.) and one unit for C (Lecture by Prof. M. D'angelo). Graduate students can get up to two units of credit. Especially, foreign students desiring to take the nano-program, but being not good at Japanese, are requested to complete these two topics in order to transfer two units of credit to the otherwise required module, “Nanotechnology Career-up Lectures for Social, Legal, Ethical Relationship”.

■ **Deadline and method of application:** Register the application either in Japanese or in English via;  
(for students in the University of Osaka)

(FORMS URL) <https://forms.cloud.microsoft/r/ENcesVExYK?origin=lprLink>

**Registration deadline is July 15<sup>th</sup>.**

You will receive information on how to access the website for the lecture documents and recorded lectures.

## ■ Lecture Schedule (about 90 minutes per one lecture)

	Dr. Simon Chouteau, Dr. Pierre Vinchon Dr. Nicolas Mauchamp, Dr. Lucas Spiske Prof. Marie D'angelo	Live-hybrid (on site and online)	Lectures from Osaka
	Prof. Marie D'angelo	Live-hybrid (on site and online)	

### Dr. Simon Chouteau et al. (7/21 – 7/24) and Prof. Marie D'angelo (7/27-7/31)

Time/date	7/21 (Tue)	7/22 (Wed)	7/23 (Thu)	7/24 (Fri)		7/27 (Mon)	7/28 (Tue)	7/29 (Wed)	7/30 (Thu)	7/31 (Fri)
10:45-12:19	1	3	5	7			2	4	6	8
13:30-15:04	2	4	6	8		1	3	5	7	

## ■ Lecturers, Titles and Abstracts of Lectures

Lecture name: International Exchange Lecture on  
Nanoscience and Nanoengineering B  
(International Exchange Special Lecture 2)  
講義名 : 国際ナノ理工学特論B

### Fundamentals of Material Modifications by Low-Pressure Plasma : Experimental and Theoretical Perspectives

Dr. Simon Chouteau, Dr. Pierre Vinchon, Dr. Nicolas  
Mauchamp, and Dr. Lucas Spiske  
(R3 Institute of Newly-Emerging Science Design, The  
University of Osaka)

- Introduction to plasma physics
- Plasma-surfaces interactions
- Atomic-scale modeling: Introduction to molecular dynamics
- Introduction to Density Functional Theory
- State of the art of Density Functional Theory
- Molecular dynamics: Application to plasma-surfaces interactions
- 2D materials modifications by low-pressure plasma
- Low-pressure plasma modeling and diagnostics

Lecture name: International Exchange Lecture on  
Nanoscience and Nanoengineering C  
(International Exchange Special Lecture 2)  
講義名 : 国際ナノ理工学特論 C

### Probing Electrons in Solids: A Comprehensive Lecture Series on Photoemission Spectroscopy Prof. Marie D'angelo

(Institute for NanoSciences of Paris, Sorbonne University,  
France)

- Fundamentals of photoemission: Basic principles and experimental aspects, including X-ray generation
- Core-level photoemission: Probing localized electronic states for the chemical analysis of solids
- Band dispersion: Angle-resolved photoemission spectroscopy for determining the electronic structure of crystalline materials
- Advanced methods: Recent developments in photoemission, including time-resolved, spin-resolved, and near-ambient-pressure photoemission

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