

ChE 430 – Nanomaterials for Chemical Engineering Applications

September 8th to December 19th 2025 – 3 credits

Professor: Raffaella BUONSANTI (raffaella.buonsanti@epfl.ch)

Teachers:

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Time and place: Fridays 8h15 to 10h00 in CH B3 31

14h of practical work => Lab project in Sion at the end of the semester

Recorded lectures: They are available on Media Space <https://mediaspace.epfl.ch/channel/ChE-430+Nanomaterials+for+chemical+engineering+application/29677> for students enrolled in the course

Course schedule and Information

Content:

Module 1: Techniques for the Synthesis of Nanomaterials
Module 2: Properties and Characterization of Nanoparticles
Module 3: Fundamentals of Nucleation and Growth
Module 4: Size and Shape Control
Module 6: Surface Chemistry and Device Implementation
Module 7: Nanomaterials in Solar Cells
Module 8: Nanomaterials in Electrocatalysis
Module 9: Nanomaterials in Photocatalysis
Module 10: Nanomaterials in Batteries (Inverted Classroom)

Supporting Material:

Moodle Page: <https://moodle.epfl.ch/enrol/index.php?id=15549>

Evaluation:

Inverted classroom (Group, 20%)
Lab Report (Group, 20%)
Classroom participation (10%)
Oral exam (50%)