Université Paris-Saclay

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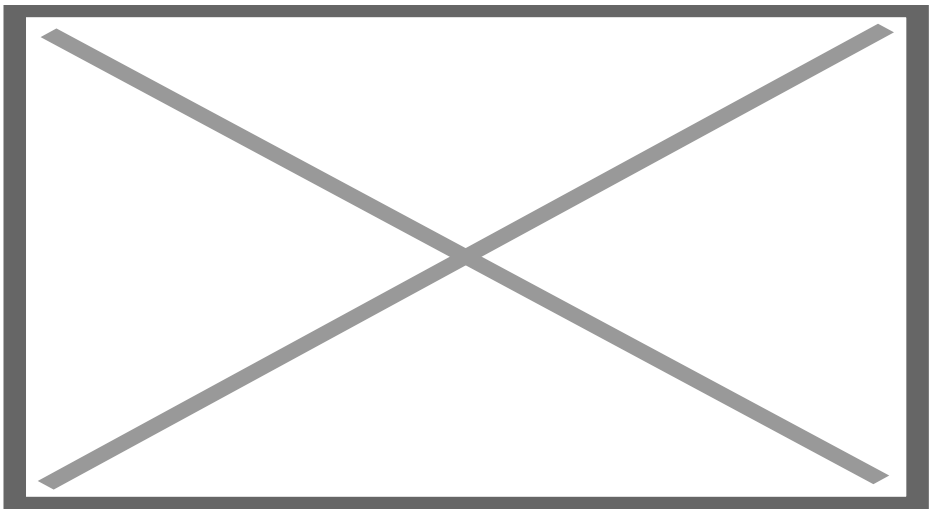
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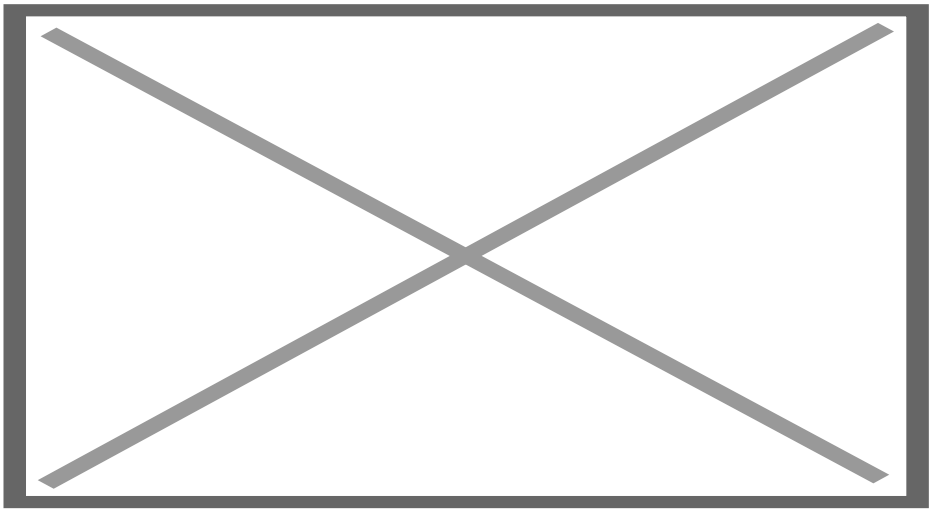
M2 Matériaux, Technologies et Composants: Photovoltaïque - Voiture Electrique

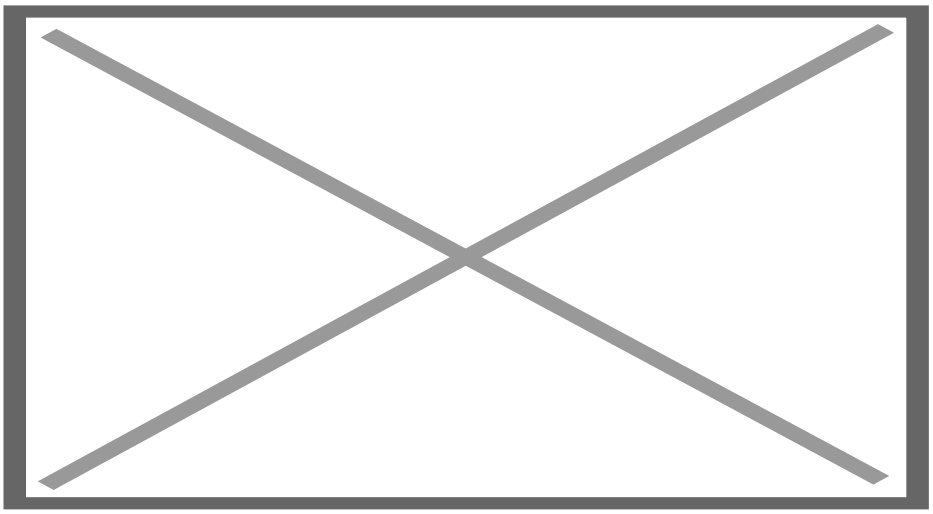
Master's degree
Specialisation Energy
Language(s) of instruction
French

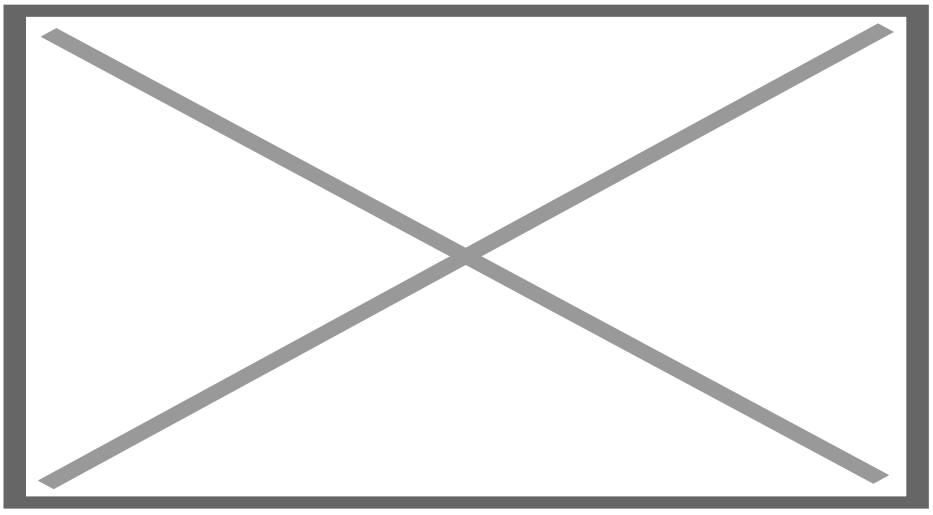
The MATEC Master’s program at Université Paris-Saclay offers multidisciplinary training in materials science and technology at the crossroads of physics, chemistry, and engineering. It combines fundamental knowledge with industrial applications, maintaining strong ties with the professional world. Students develop expertise in the characterization, modeling, and implementation of advanced functional materials. A 4- to 6-month internship in a laboratory or company completes the training. The program prepares graduates for both doctoral studies and careers in high-tech industries.

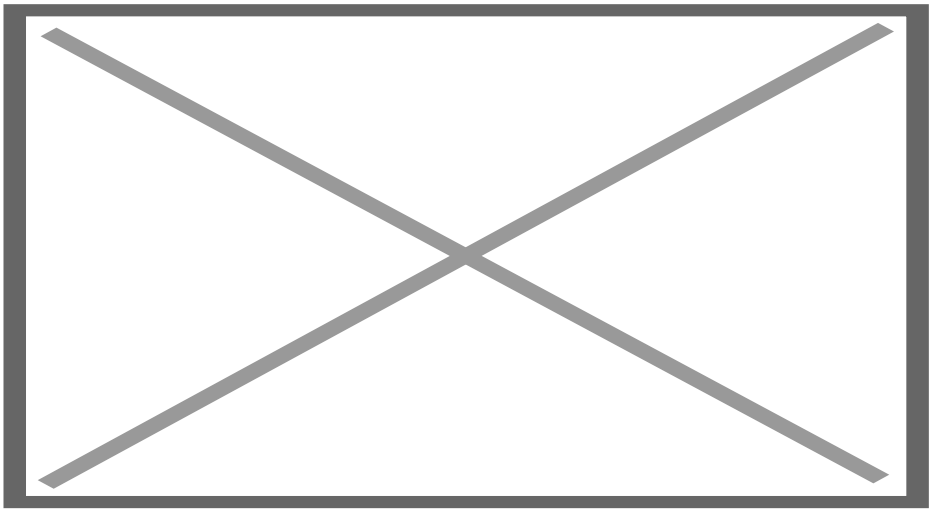
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Information

- Overview
- Application requirements
- Schedule

Présentation

Objectives

The program combines two main dimensions. The first is technical, focusing on the development, characterization, application, and implementation of materials with optical, magnetic, electrical, piezoelectric, and chemical functionalities. The second is oriented toward the industrial environment, covering team management, technology monitoring, quality and reliability assurance, and compliance with standards.

Students will gain hands-on experience with numerical simulation software to model multi-physics and multi-scale systems, as well as exposure to industrial tools for non-destructive testing. The curriculum is closely connected to the professional world, with several innovative courses taught by industry experts.

The materials studied can serve as sensors, information storage and guidance systems, routers, or light sources, and have direct applications in mechatronic systems and emerging technologies.

This multidisciplinary training in materials technology is designed to prepare graduates for careers as project managers in technical environments, production, or system design; as business managers in the technology sector; as specialists capable of tracking advances in new materials; or as technical sales managers.

Given the wide range of functionalities of these materials—optical, magnetic, electrical, piezoelectric, chemical, and biochemical—the potential fields of application include information technology, telecommunications, aerospace, naval and automotive industries, medicine, and environmental sciences.

Débouchés

Career prospects

After a Master's + PhD: researcher or lecturer
R&D Engineer

Further Study Opportunities

PhD
Engineering, research and development

Calendar

Start of programme (indicative date)
04/09/2025
Admission

Capacity

Available Places

18

Target Audience and Entry Requirements

Students who have completed their studies in France are required to hold a Master 1 degree in Physics or Materials Science. However, given the multidisciplinary nature of the program, it is also open to graduates with a Master’s degree in Chemistry or Electronics, depending on their chosen options. A background in crystallography and quantum mechanics is expected, although a general refresher course is offered at the beginning of the program.

For students who have completed their studies outside of France, applications are reviewed on a case-by-case basis. In general, an engineering degree (equivalent to five years of higher education) with a specialization in Materials Science is required.

Période(s) de candidature

Inception Platform

From 30/01/2026 to 08/07/2026

Supporting documents

Compulsory supporting documents

Motivation letter.

Letter of recommendation or internship evaluation.

List of other masters requested (excluding Saclay).

All transcripts of the years / semesters validated since the high school diploma at the date of application.

Certificate of French (compulsory for non-French speakers).

Curriculum Vitae.

Additional supporting documents

Detailed description and hourly volume of courses taken since the beginning of the university program.

VAP file (obligatory for all persons requesting a valuation of the assets to enter the diploma).

Document indicating the list of local M2 choices available here : https://urlz.fr/i3Lo.

Supporting documents :
- Residence permit stating the country of residence of the first country
- Or receipt of request stating the country of first asylum
- Or document from the UNHCR granting refugee status
- Or receipt of refugee status request delivered in France
- Or residence permit stating the refugee status delivered in France
- Or document stating subsidiary protection in France or abroad
- Or document stating temporary protection in France or abroad.

Programme

Subjects	ECTS	Semester	Lecture	directed study	practical class	Lecture/directed study	Lecture/practical class	directed study/practical class	
Langues	3	Semestre 1	18						

Charger le détail

Subjects	ECTS	Semester	Lecture	directed study	practical class	Lecture/directed study	Lecture/practical class	directed study/practical class	
Elaboration et caractérisation des matériaux	6	Semestre 1	24	24	8				
Charger le détail									
Environnement professionnel - PPEI	2	Semestre 1	12						
Charger le détail									
Filières et dispositifs pour le photovoltaïque	6	Semestre 1	36	16	8				
Charger le détail									
Simulations numériques pour les systèmes	4	Semestre 1	19		15				
Charger le détail									
Propriétés physiques et fonctionnelles des matériaux pour l'énergie et le transport	5	Semestre 1	26	26					
Charger le détail									
Modélisation et simulation numérique (Monte Carlo, dynamique moléculaire, COMSOL)	4	Semestre 1	14	6	22				
Charger le détail									

Subjects	ECTS	Semester	Lecture	directed study	practical class	Lecture/directed study	Lecture/practical class	directed study/practical class	distal learn cou
Initiation à et par la Recherche	24	Semestre 2							
Charger le détail									

Subjects	ECTS	Semester	Lecture	directed study	practical class	Lecture/directed study	Lecture/practical class	directed study/practical class	distan learn cour
Véhicule Electrique	6	Semestre 2	26	21	0				

Charger le détail

Teaching Location(s)

SACLAY
VELIZY VILLACOUBLAY
VERSAILLES

Contact

- **Thierry KOCINIEWSKI**

  Responsable Master
- **Ophélie BREGIER**

  Gestionnaire de scolarité des Masters

http://www.universite-paris-saclay.fr/formation/master/energie/m2-materiaux-technologies-et-composants-photovoltaique-voiture-electrique