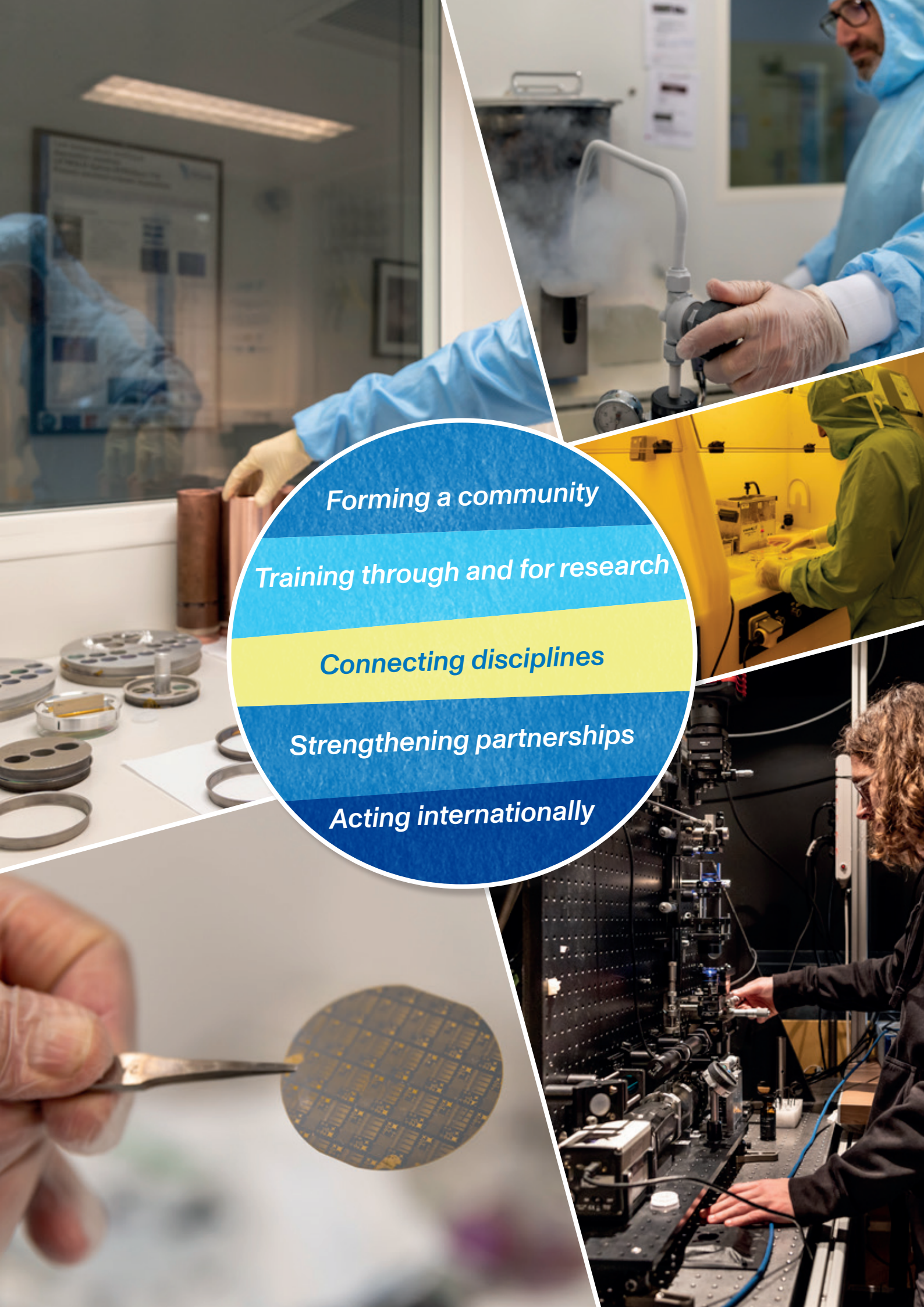


AMUtech

amU Advanced materials and
nanotechnologies institute
Aix Marseille Université



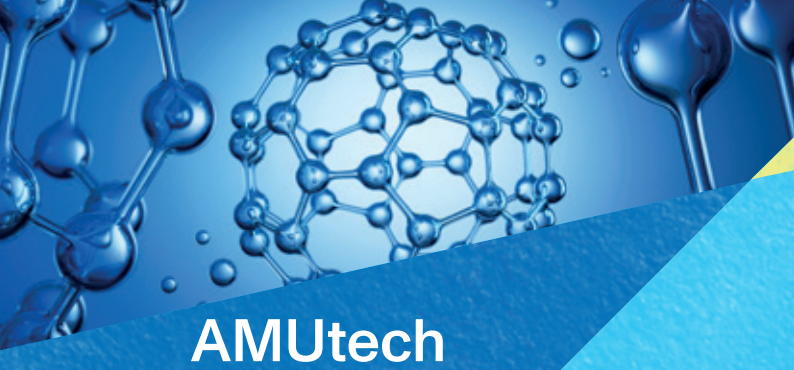
Forming a community

Training through and for research

Connecting disciplines

Strengthening partnerships

Acting internationally



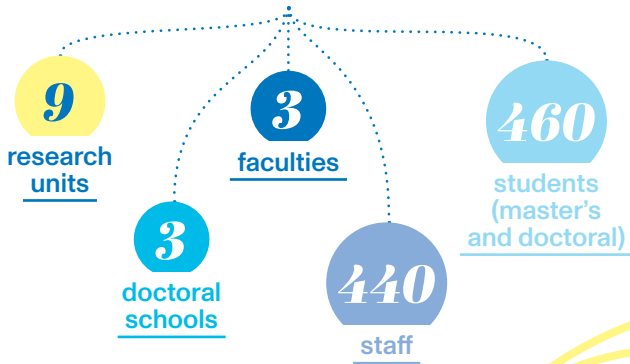
AMUtech

Our main goal: to bring together all the players in materials sciences and nanotechnologies on the Aix-Marseille site

AMUtech's ambition is to lead and coordinate Aix-Marseille's strengths in materials sciences and nanotechnology by developing collaborations between partner research units, strengthening the link between education and research, stepping up the development of shared platforms and boosting the site's attractiveness and socio-economic development.

The institute is based on the synergy of the skills and resources of the site's physics and chemistry research units involved in the study of materials and nanotechnologies. The aim is to harness the properties of matter at the nanometric scale for developing new materials at the meso- and macroscopic scales, with particular focus on intelligent materials and optronics. The institute is resolutely multidisciplinary, conducting initiatives to consider and study the economic and societal challenges of nanotechnologies.

Forming a community



- Nanomaterials
- Functional materials
- Optronics
- Surfaces/Interfaces
- Nano objects

Training through and for research

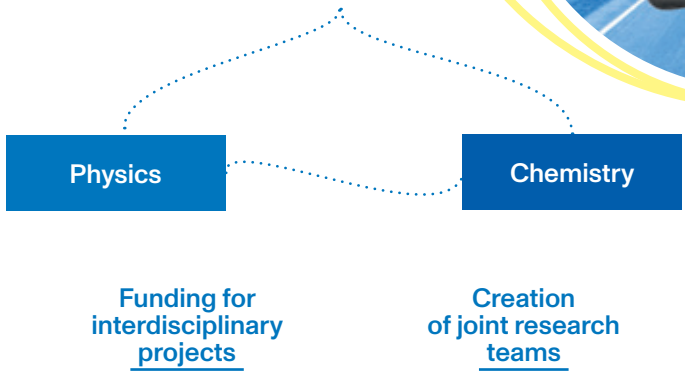
- ▶ Funding for laboratory internships for M1 and M2 students
- ▶ Acquisition of cutting-edge bench top equipment (lithography, NMR and SEM) to train students on high-performance equipment
- ▶ Setting up an AMUtech PhD programme



Acting internationally

- ▶ Funding for international doctoral student mobility to set up new partnerships
- ▶ Support for summer schools within the CIVIS alliance, European civic university
- ▶ Funding for international conferences

Connecting disciplines



Strengthening partnerships

- ▶ Local socio-economic world
- ▶ Mediterranean Ethics Centre at the Hôpital de la Timone
- ▶ STMicroelectronics
- ▶ Links with local humanities and social science players
- ▶ ...



Watch the institute's animated film



Meet our executive office



Director:
Pierre Müller



Deputy research director:
Christophe Girardeaux



Deputy director for the
socio-economic world:
Éric Besson



Project manager:
Artemis Chrysovitsanou



Deputy training director:
Florence Vacandio



CNRS transfer engineer:
Benoit Leduc

Discover the entire governance team:
<http://url.univ-amu.fr/institut-amutech-gouvernance>

Focus on our network of platforms

One of the unique features of the institute is the existence of a vast network of platforms and key facilities within the scope of its research fields. AMUtech also includes 17 medium- and heavy-duty platforms, 12 of which are accredited by AMU and/or CNRS, representing a unique range of instruments worth more than €35 million. Some of these platforms are within the scope of the Marseille Chemical Sciences Federation (FR1739), while others are in the laboratories. An inventory of the key facilities available to the AMUtech community was drawn up to give these facilities greater visibility. It enables institute members to determine the full range of scientific expertise and experimental resources available, and strengthen exchanges between researchers and teacher-researchers on the Aix-Marseille site.



Contact

Director: Pierre Müller
Project manager: Artemis Chrysovitsanou

amutech-contact@univ-amu.fr

www.univ-amu.fr/amutech



Training at AMUtech

amU Advanced materials and
nanotechnologies institute
Aix Marseille Université

*Training for, through and in research,
with continuity from master's to doctorate level*

Training for, through and in research,
with continuity from master's to doctorate level

Our ecosystem

380

master's students¹

80

PhD students²

5

key master's

1

interdisciplinary doctoral programme

5

partner faculties

3

partner doctoral schools

- ▶ Faculty of sciences (FS)
- ▶ Marseille polytech
- ▶ Aix-Marseille institute of technology (IUT)
- ▶ Faculty of arts, letters, languages, humanities (ALLSH)
- ▶ Faculty of pharmacy

- ▶ Chemical sciences (ED 250)
- ▶ Physics and science of matter (ED 352)
- ▶ Engineering sciences (ED 353)

- ▶ Nano²
- ▶ Chemistry
- ▶ Physics
- ▶ Instrumentation
- ▶ Health engineering

Consult all master's degree specialisations:



2

Erasmus Mundus labels

- ▶ Chemical nano-engineering (CNE)
- ▶ Europhotonics

¹ students enrolled on master's specialisations attached to the institute
² doctoral students enrolled in our partner doctoral schools

Our key actions

2020-2023

107

months of laboratory internships for M1 and M2 students funded

4

international doctorate mobility opportunities funded

4

days dedicated to student training and employability

1

item of state-of-the-art research equipment currently being acquired

1

doctoral programme

"Thanks to the AMUTech mobility grant, I was able to visit an internationally recognised research group in the Netherlands for 3 months during my thesis. This visit enabled me to see a different way of working (in English) as well as developing new scientific skills. I then used these contacts to apply for a post-doctorate in the group where I'm currently working"



Clémence Badie
Dr in physics and science of matter (AMU)

Our international training

CIVIS alliance

European civic university: support for summer schools

3

doctoral mobilities

1

PhD programme

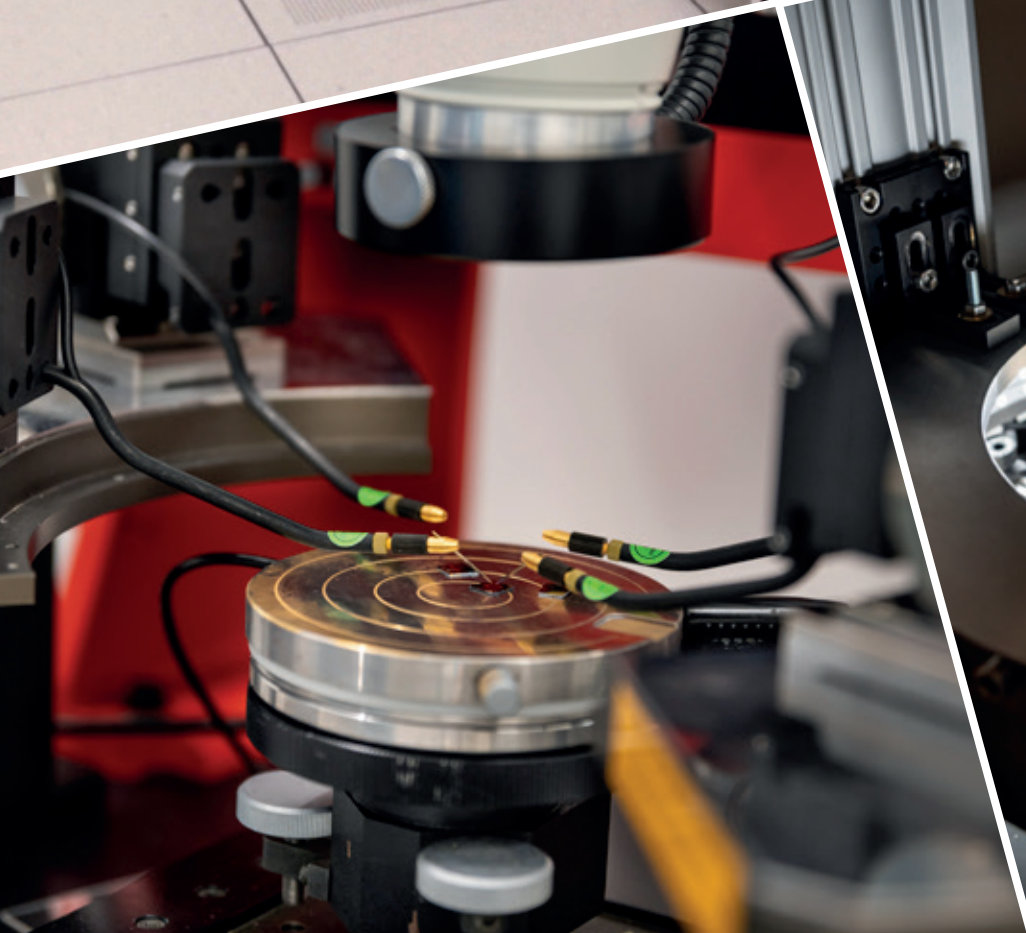
Contact



Research at AMUtech

amU Advanced materials and
nanotechnologies institute
Aix Marseille Université

*Bringing together the advanced
materials and nanotechnologies
strengths of the Aix-Marseille site to consolidate
our international scientific position*



Bringing together the advanced materials and nanotechnologies strengths of the Aix-Marseille site to consolidate our international scientific position

Research ecosystem

9

research
units

Advanced science and technology

- ▶ Marseille interdisciplinary centre for nanoscience (CINaM)
- ▶ Provence institute for materials, microelectronics and nanosciences (IM2NP)
- ▶ Institute for radical chemistry (ICR)
- ▶ Marseille institute for molecular science (ISM2)
- ▶ Fresnel institute
- ▶ Divided materials, interfaces, reactivity, electrochemistry (MADIREL)
- ▶ Centre for theoretical physics (CPT)
- ▶ Laboratory for plasma lasers and photonic processes (LP3)
- ▶ Physics of the interactions of ions and molecules (PIIM)

Aix Marseille
Université

440

staff

CNRS

Polytech

Our main areas of research

AMUtech is AMU's project for a multidisciplinary institute for training, research and innovation, at the crossroads of materials sciences, physics and chemistry "from atoms to materials" and nanotechnology engineering sciences. Its aim is to study condensed matter and its new applications by controlling its physical, chemical and quantum properties down to the nanometre scale.

- | | |
|-----------------------------|-----------------------------|
| ▶ Surfaces/interfaces | ▶ Assembly |
| ▶ Two-dimensional materials | ▶ Reactivity |
| ▶ Nanomaterials | ▶ Optronics |
| ▶ Functional materials | ▶ Nano-based devices |
| ▶ Nano objects | ▶ Heterogeneous integration |

Our key actions

2020-2023

36

funded
research
projects

50

publications of
articles referenced
by AMUtech

1

Partnership chair
with
STMmicroelectronics

21

Theme days,
both organised and
jointly organised

2

joint research
teams created

Funding for
international
conferences

"I was coordinator of 2 AMUtech projects. The first (call for projects 2021 - MADIREL/IM2NP) focused on the development of nanopowders for CO2 sensor applications. We introduced a new process which is currently being assessed with a view to filing a patent application. The second project (call for projects 2022 - MADIREL/CINAM) focused on the stability of sulphur confined in porous carbons for CO2 storage applications. The collaboration initiated thanks to the Institute led to the drafting and subsequent award of an ANR-PRC project (call for projects 2023)."



Marie-Vanessa Coulet
Research director at the CNRS
Awardee of NAPO-CO2 (with S. Bernardini -
IM2NP) - call for projects 2021
STABS recipient (with D. Ferry - CINAM) -
call for projects 2022

Contact

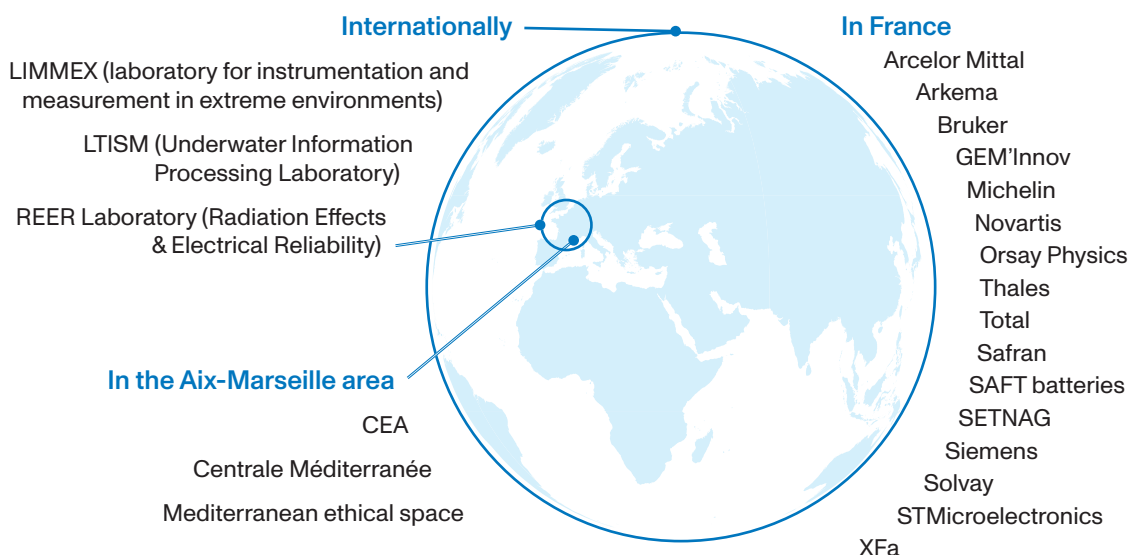
Strengthening and developing special links with academic and institutional players and the socio-economic and cultural world

"STMicroelectronics and AMUtech launched a five-year partnership chair in Advanced Materials and Systems for Micro- and Nanoelectronics in 2021. In a strategic industry such as ours, and faced with increasing demand for semiconductors, this chair will enable us to meet technical challenges, particularly through the introduction of new materials, and align our training needs with those of industry in order to bring ever greater innovation and differentiation to our products."

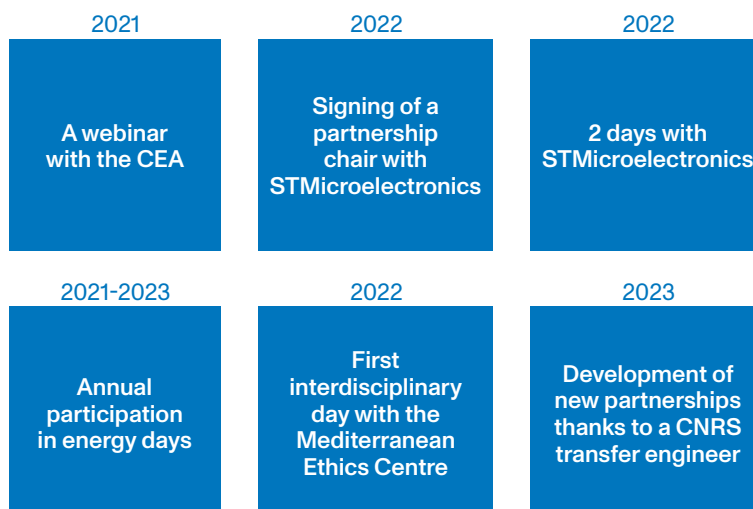


Arnaud Regnier
Rousset R&D Technologies & Electrical Characterization Manager

Our key partners include



Our key actions



Contact

Deputy director for the socio-economic world: **Éric Besson**
CNRS transfer engineer: **Benoît Leduc**

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www.univ-amu.fr/amutech





*The AMUtech institute brings together teams
on 5 university and scientific sites*



The Aix Marseille Université institutes are coordinated by the Amidex foundation



The Aix-Marseille Excellence Initiative, a consortium between Aix Marseille Université and 8 partners

