

Achievements and Prospects on NAIST's International Collaborative Laboratories in France

Chikako DOI

Grants-in-Aid Section, Research Cooperative Division
Nara Institute of Science and Technology (NAIST)



Located in Kansai Science City

Osaka



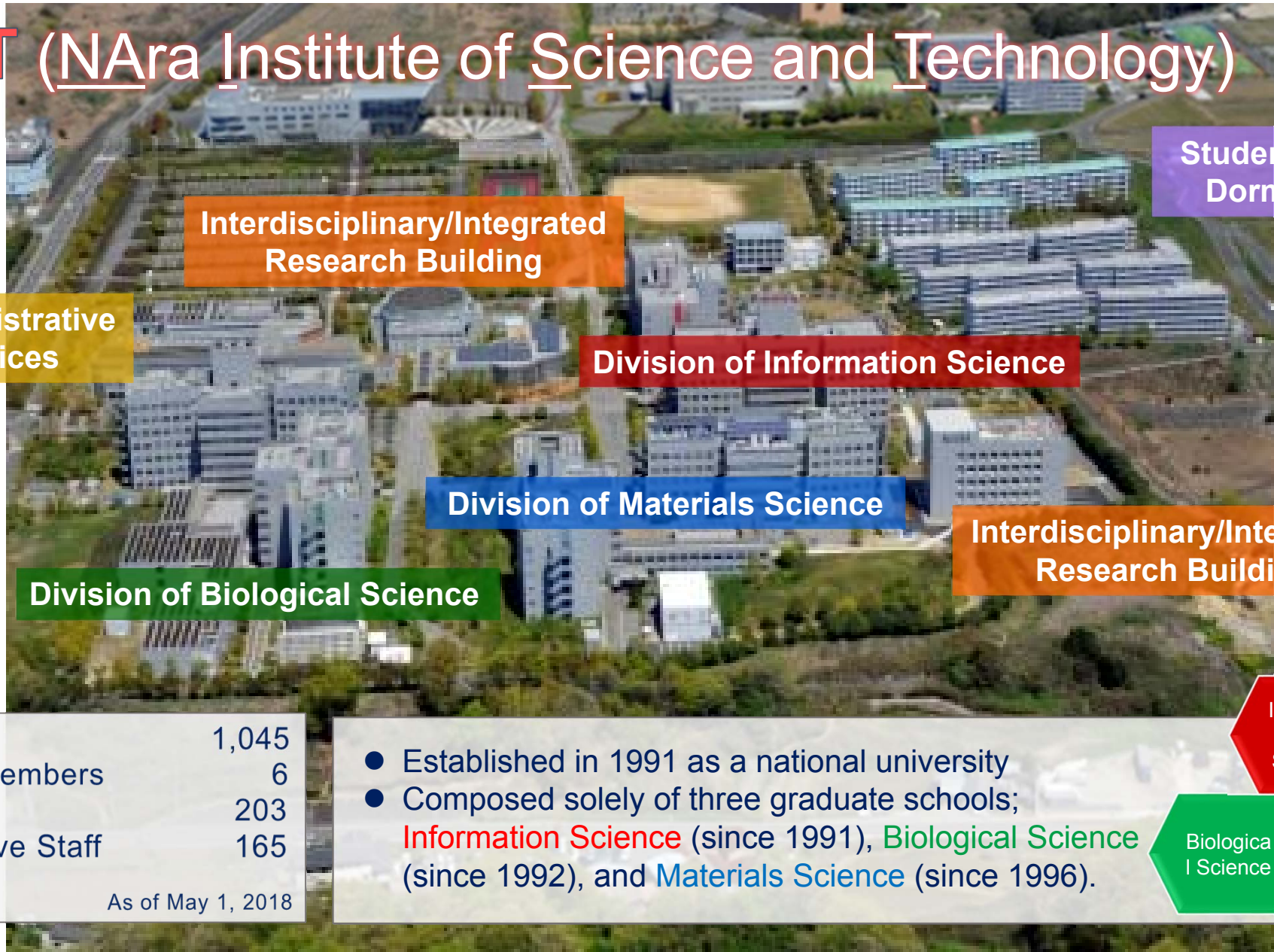
Kyoto



Nara



NAIST (NAra Institute of Science and Technology)



Administrative
Offices

Interdisciplinary/Integrated
Research Building

Student & Staff
Dormitories

Division of Information Science

Division of Materials Science

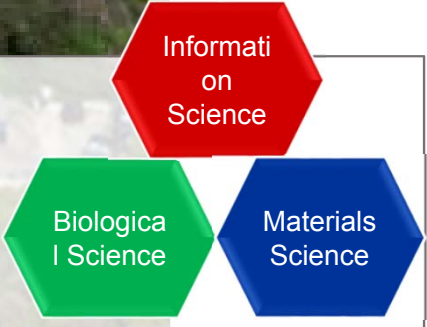
Interdisciplinary/Integrated
Research Building

Division of Biological Science

Students	1,045
Executive Members	6
Faculty	203
Administrative Staff	165

As of May 1, 2018

- Established in 1991 as a national university
- Composed solely of three graduate schools; **Information Science** (since 1991), **Biological Science** (since 1992), and **Materials Science** (since 1996).



NAIST as an international research university

International students in NAIST (as of May 1, 2018)

International students comprise about **24%**
 Total: **252 students** from **31 countries/regions**



Academic Exchange Agreement (as of May 1, 2018)

28 Countries/Regions
101 Institutions



Global Research and Education

Top Global University Project
(10 years from 2014, 8M US\$, supported by MEXT)

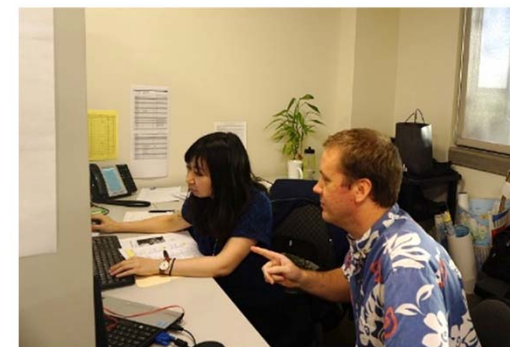
NAIST Global³

**Global leaders
in science and technology**



**Global standard
graduate education**

**Global campus
environment**

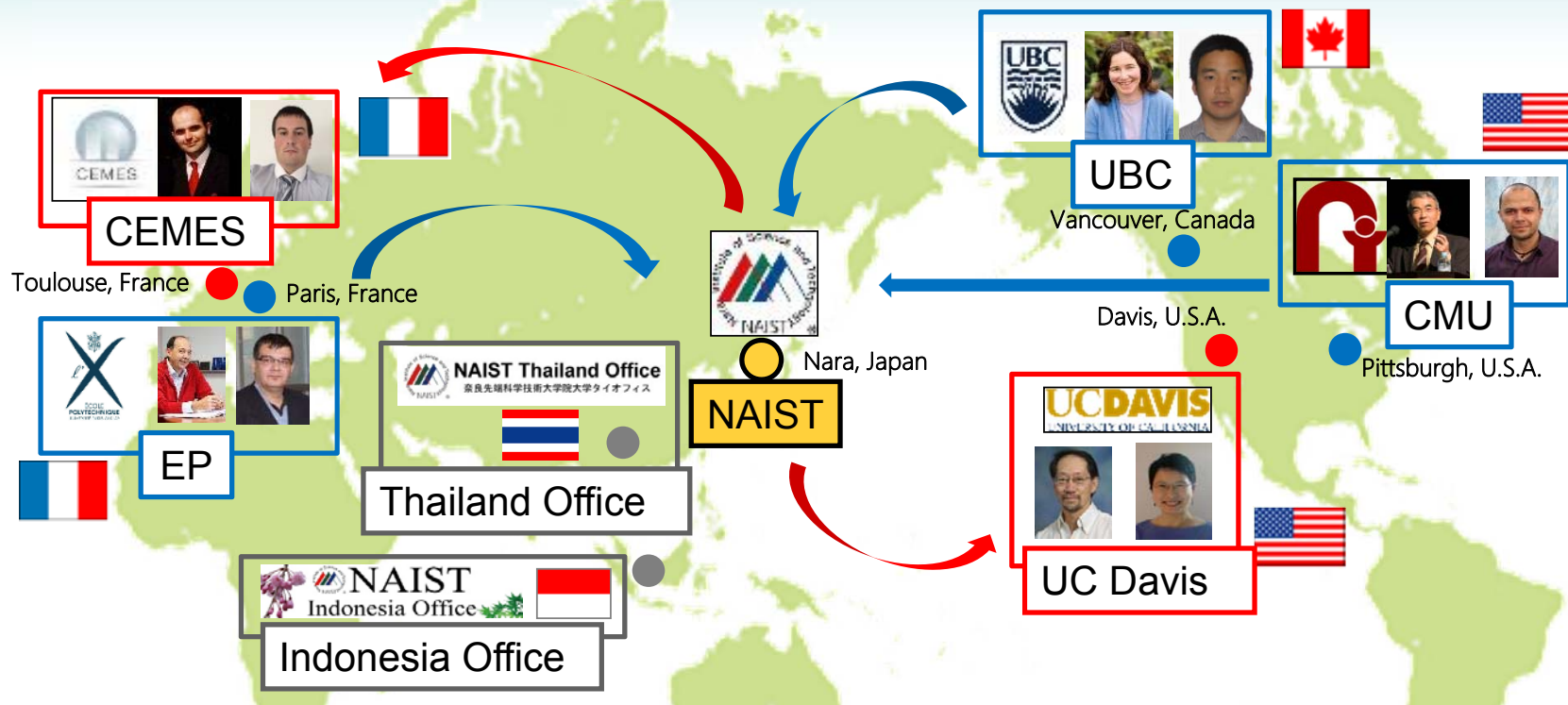


Program for Promoting the Enhancement of Research Universities

(10 years from 2013, 23M US\$, supported by MEXT)



International Joint Education and Research Network



- **International Collaborative Laboratories** (under the Program for Promoting the Enhancement of Research Universities) : 2 labs in the foreign institutes and 3 labs in NAIST
- **Offices** (under the Top Global University Project)

NAIST-CEMES International Collaborative Laboratory for Supraphotoreactive Systems



Project Term: October, 2014-

Place: CEMES, Toulouse

Faculties:

Tsuyoshi KAWAI (NAIST)

Gwénaél Rapenne (CEMES)

Colin John Martin (NAIST)



CEMES

Aims:

1. Development of supra-photoactive systems based on elaborative organized molecules with 2D and 1D ordering and explore advanced science for their photo-sensitivity of far-out-ranging usual systems.
2. Cultivate human resources for grovel scientific leaders of next generation.
3. Explore advanced technology based on the molecular science contributing future innovation

Project Term: February 15, 2016-

Place: NAIST, Nara

Faculties:

Pere Roca i Cabarrocas (EP)

Yvan Bonnassieux(EP)

Yukiharu URAOKA (NAIST)



École Polytechnique (EP)

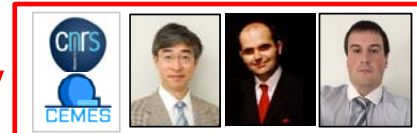
Aims:

1. Development of high-efficiency Perovskite-type solar cells in combination with printing skills of EP and vacuum processing skills of NAIST
2. Cultivate human resources for global scientific leaders of next generation.
3. Explore advanced technology based on thin-film materials contributing future innovation

Achievements in France

International Collaborative Laboratories with French Institutes

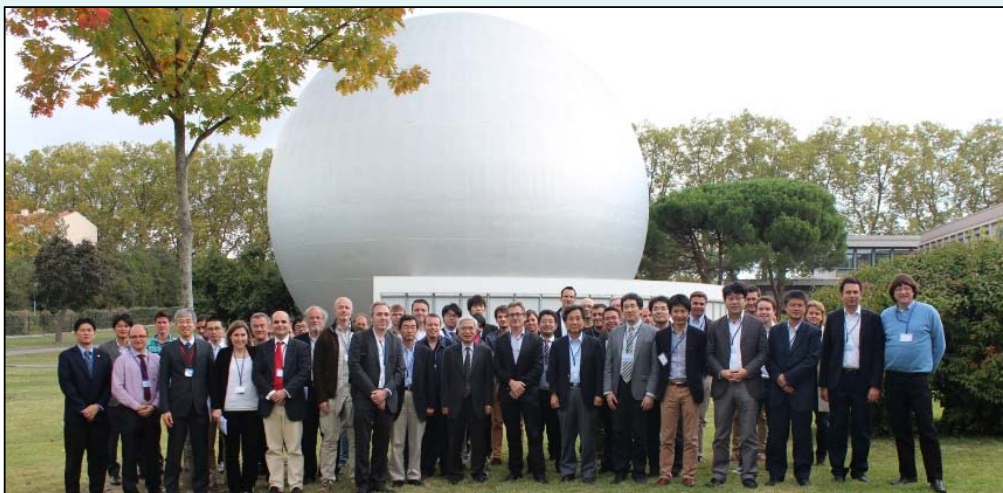
- **NAIST-CEMES International Collaborative Laboratory**
- **NAIST-EP International Collaborative Laboratory**



Achievements

- Joint Symposiums
- New Scheme
 - Doctoral double degree Program with Université Paul Sabatier (UPS)
 - Cross Appointment System with UPS

Joint Symposium



PEM2 Symposium (October 6-8, 2015 in UPS)



Prof. Jean-Pierre
Sauvage won the
Nobel Prize in
Chemistry 2016

PROGRAM Tuesday 6th October 2015

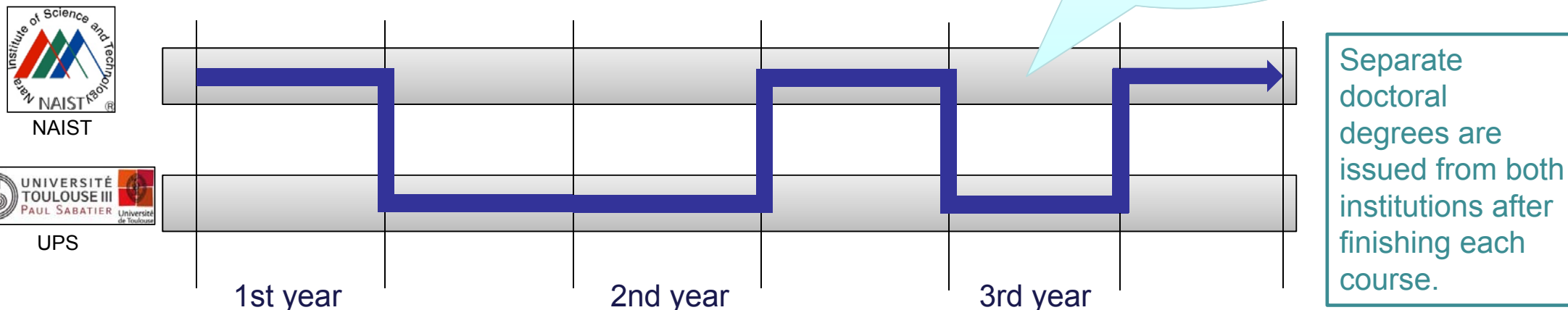
- 08:00 – 09:00 : Registration
09:00 – 09:15 Opening (Tsuyoshi Kawai and Gwénaél Rapenne)
 09:15 – 12:10 : Session 1 (Chairman: Dr Frédéric Coutrot)
 09:15 – 10:00 **Prof. Hiroshi Nishihara** (Tokyo University, JP)
 - "Stimuli-responsive pyrimidine ring rotation in copper complexes for switching their physical properties"
 10:00 – 10:25 **Prof. Michael Schmittel** (University of Siegen, GE)
 - "Photo- and speed-regulated nanorotors"
 10:25 – 11:00 : Coffee Break and posters
 11:00 – 11:45 **Prof. Kenji Matsuda** (Kyoto University, JP)
 - "Dynamic Supramolecular Assembly Made of Photochromic Diarylethene at 2D and 3D"
 11:45 – 12:10 **Dr Keitaro Nakatani** (ENS Cachan, FR)
 - "Photoswitchable fluorescent systems: mutual influence between fluorescent and photochromic moieties"
 12:10 – 13:30 : Lunch (buffet) and posters
 13:30 – 15:50 : Session 2 (Chairman: Prof. Michael Schmittel)
 13:30 – 14:15 **Prof. Stefan Hecht** (Humboldt University, GE)
 - "Switching with photons and electrons"
 14:15 – 14:40 **Dr Mitsuharu Suzuki** (NAIST, JP)
 - "Solution-processable photoprecursors of insoluble narrow band gap semiconductors for organic photovoltaic applications"
 14:40 – 15:05 **Dr Michel Sliwa** (University of Lille, FR)
 - "Getting unprecedented fast photochromic organic nanoparticles: a challenge solved using bridged hexaarylbiimidazole"
 15:05 – 15:50 **Dr Kazunori Sugiyasu** (NIMS, JP)
 - "Living supramolecular polymerization"
 15:50 – 16:20 : Coffee Break and posters
 16:20 – 18:40 : Session 3 (Chairman : Prof. Kenji Matsuda)
 16:20 – 17:05 **Dr Frédéric Coutrot** (University of Montpellier, FR)
 - "Triazolium-containing interlocked molecular machines"
 17:05 – 17:30 **Dr Taku Hasobe** (Keio University, JP)
 - "Photofunctional supramolecular assemblies of polycyclic aromatic hydrocarbon and porphyrin derivatives"
 17:30 – 17:55 **Dr Régis Barillé** (University of Angers, FR)
 - "Light responsive multi-dimensional azopolymer nano-objects"
 17:55 – 18:40 **Prof. Jean-Pierre Sauvage** (Strasbourg University, FR)
 - "Contractile and extensible molecular systems : towards artificial muscles"
 20:00 : Conference Dinner - Brasserie des arcades, 14 place du Capitole, Toulouse.

Double Degree Program with UPS

NAIST established doctoral double degree programs with UPS for the purpose of


- Assessing the international dimension of the doctoral programs
- Promoting doctoral students mobility
- Developing scientific cooperation

e.g. The path of a doctoral student from NAIST sent to UPS



Graduate from the Double Degree Program

Dr. Jan Patrick Calupitan won the 2018 **C'Nano Best Thesis Award** in the "Interdisciplinary Research" category for his work by the French nanoscience research network C'Nano.



Prix de thèse C'Nano 2018

Cher Dr Calupitan, cher Jan Patrick,

C'est avec grand plaisir que nous vous informons que la qualité et l'excellence de vos travaux de Doctorat ont retenu tout l'intérêt du jury des Prix de thèse C'Nano. Pour cette raison, nous souhaitons vous remettre le **Prix de thèse C'Nano 2018** dans la catégorie « *Recherche interdisciplinaire* ».

La cérémonie de remise des Prix aura lieu le **mercredi 12 décembre 2018 à partir de 17h45** au Palais des congrès Neptune de **Toulon**, lors de la 2^{ème} édition du congrès national du C'Nano. Au cours de cette cérémonie, vous aurez l'opportunité de présenter les résultats marquants de vos travaux sous le format « *Ma thèse en 5 minutes* ». Votre exposé devra être clair concis et néanmoins scientifique, et adapté à un auditoire pluridisciplinaire (nanophysique, nanochimie, nanométrie, nanobiologie...).

Le C'Nano prendra en charge votre mission pour cette journée. Nous vous invitons à prendre contact avec notre gestionnaire, Mr Christophe DECILAP pour organiser votre mission : christophe.decilap@cnrs.fr

Par ailleurs, si vous souhaitez participer à l'intégralité du congrès, n'hésitez pas à procéder à votre inscription dès que possible sur notre plateforme en choisissant le tarif « invité - 0€ » : <https://www.azur-colloque.fr/DRO2/inscription/preinscription/95/fr>


Nous vous recontacterons très prochainement pour vous donner le canevas de **présentation à nous transmettre par email pour le lundi 3 décembre**.

Dans l'attente de la confirmation de votre présence, les membres du jury vous félicitent chaleureusement.

Très cordialement,

Le comité de pilotage du C'Nano et le Professeur Bruno CHAUDRET, Président du Jury des Prix de thèse C'Nano 2018

Personne référente :
Julie CARIMALO, julie.carimalo@cnrs.fr / Tél. : +33(0)1 44 27 60 87




Dr. Jan Patrick Calupitan

First PhD student of the doctoral double-degree program between NAIST and UPS. Currently a postdoctoral researcher at the Laboratory of Photophysics and Photochemistry of the supramolecular and macromolecular (PPSM) ENS Paris-Saclay.

Relationship with French Institutes

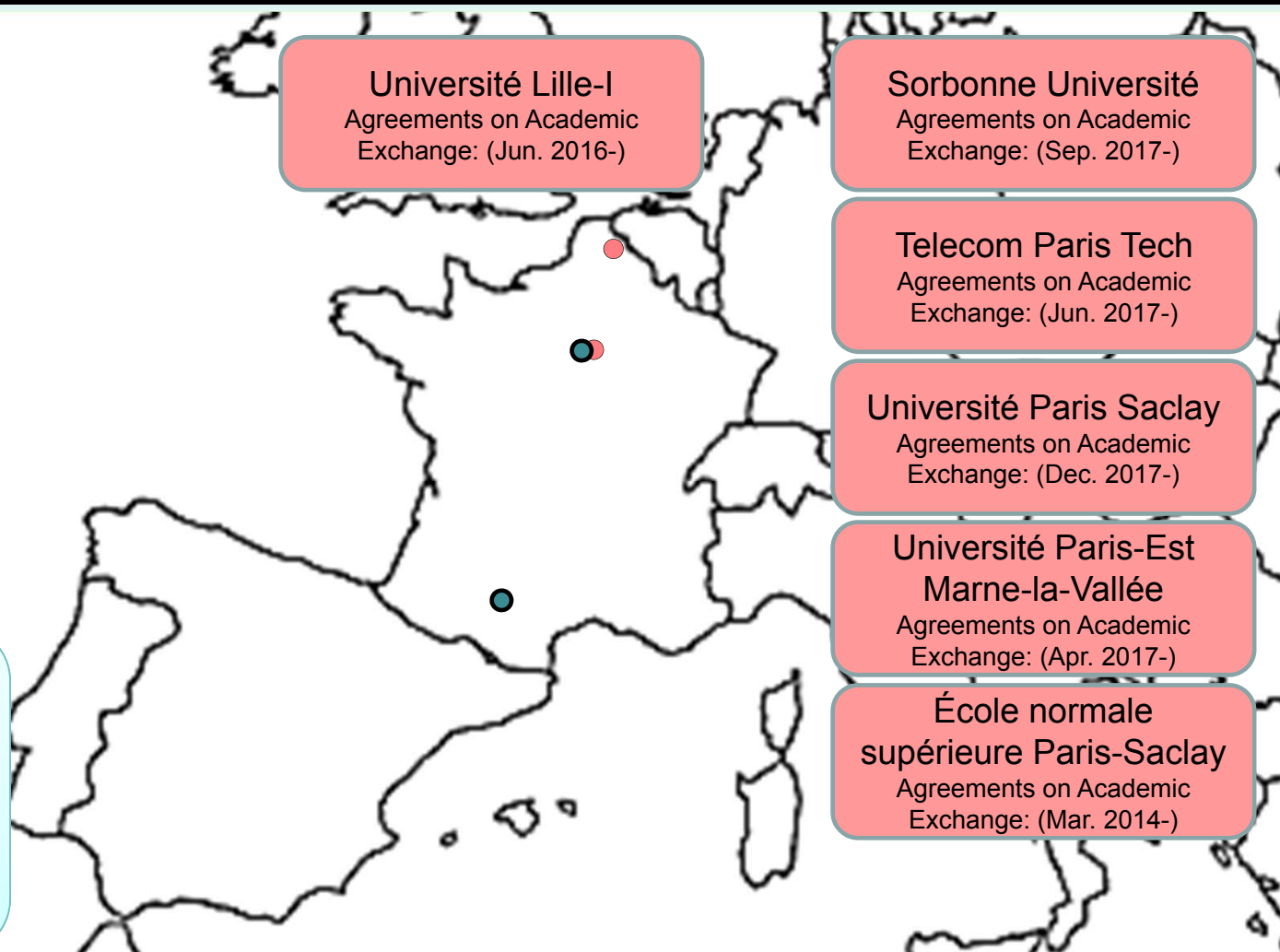
NAIST-École Polytechnique International Collaborative Laboratory for High-Efficiency Perovskite Solar Cells

With École polytechnique
At NAIST (Feb. 2016-)

NAIST-CEMES International Collaborative Laboratory for Supraphotoactive Systems

With Université Paul Sabatier
At CEMES-CNRS (Oct. 2014-)

- Joint Symposiums
- New Scheme
 - Doctoral double degree Program with UPS
 - Cross Appointment System with UPS



Achievements and Prospects

We hope we make further international research and education network in Europe.

