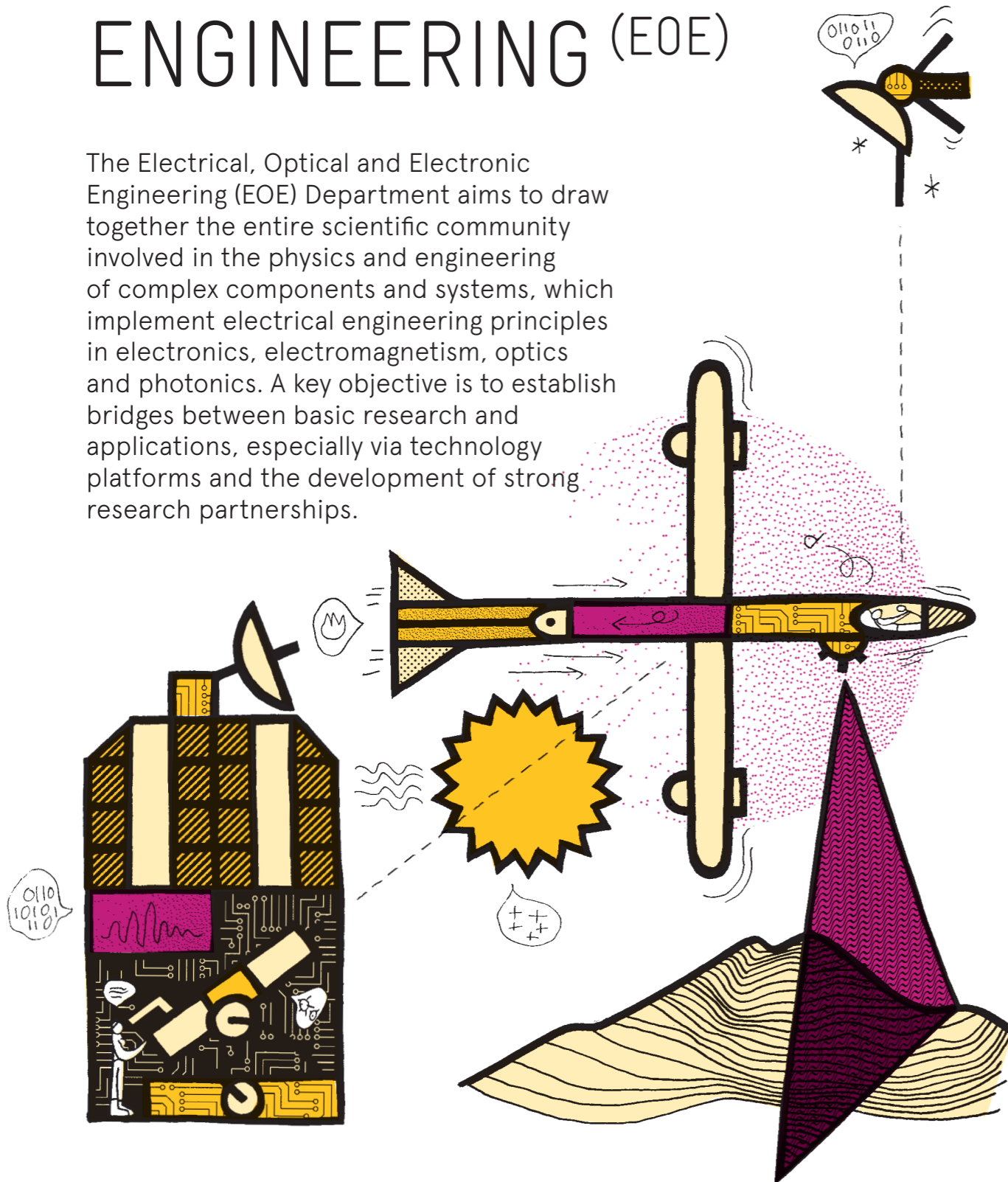


# ELECTRICAL, OPTICAL AND ELECTRONIC ENGINEERING (EOE)

The Electrical, Optical and Electronic Engineering (EOE) Department aims to draw together the entire scientific community involved in the physics and engineering of complex components and systems, which implement electrical engineering principles in electronics, electromagnetism, optics and photonics. A key objective is to establish bridges between basic research and applications, especially via technology platforms and the development of strong research partnerships.

## DEPARTMENT METRICS

- 20 labs
- 430 researchers
- 400 PhD students
- 150 technical staff



## KEY FOCUS

### Electrical engineering

- Electric planes
- Electric vehicles, autonomous vehicles
- Production, management, savings, smart grids

### Electromagnetic radiation

- Antennas, satellites, radar, stealth
- Energy transfer, EMC
- Imaging

### Charge and spin electronics and nano-electronics

- Quantum components
- Power components
- HF components

### Optics and photonics

- Optronics, imaging
- Quantum components
- Optronics, lidar
- Photovoltaics
- Laser, imaging
- Fiber optics

### Sensors and microsystems

- Sensors, safety
- Medical microsystems
- Sensors and sensor networks

### Plasma physics

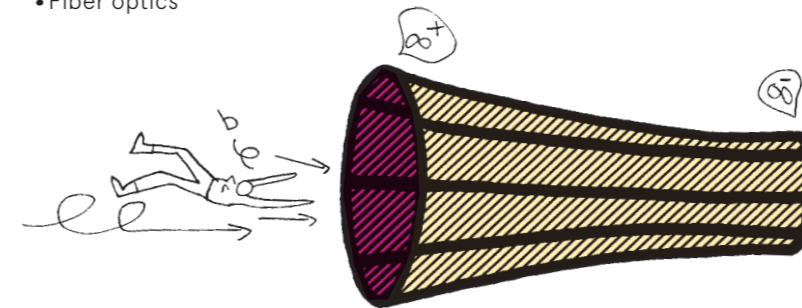
- Reactors
- Fusion
- Plasma medicine

### Materials and nanomaterials

- Extreme materials
- Supermaterials
- Automotive materials
- Biocompatible materials
- Metamaterials

### Medical physics and instruments

- Biosensors
- Diagnosis-on-a-chip
- Medical imaging



## AREAS OF APPLICATION

- Aeronautics and space
- Quantum engineering
- Transport
- Energy
- Medical physics
- Telecommunications and the Internet of Things
- Artificial Intelligence

## SOCIETAL ISSUES

- Optical communication and electromagnetism
- Biomedical and healthcare
- Micro and nano-biosystems
- Smart sensors and sensor networks
- Innovative processes and environmental protection
- Energy generation/processing
- Clean and smart transport
- Smart and sustainable cities
- Safety and reliability

### LABEX

- LASIPS LabEx (Paris-Saclay Systems and Engineering Laboratory)
- NanoSaclay LabEx

### STRATEGIC RESEARCH INITIATIVES

- **B5G: Beyond 5G**  
Physical and software technology for the Internet of Things
- **BME (BioMedical Engineering)**
- **Exascale**  
High-performance computing and simulation
- **G4E: Grid4Earth**  
Energy management in hybrid networks
- **IQUPS**  
Quantum engineering
- **SRI (Spintronic Research Initiative)**

### CORPORATE RELATIONS

- **Partner Club**  
More than 66 companies (large groups and SMEs)
- **PSA OpenLabs**  
- Optronics (C2N)  
- Electromobility (GeePs+SATIE)
- **Île-de-France Photovoltaics Institute at Paris-Saclay (IPVF)**  
Total, EDF, Air Liquide, Horiba, Riber
- **VéDéCOM**  
**Communicating, alternative fuel vehicle**  
Renault, PSA, SAFRAN, Valéo
- **B5G**  
Orange, Nokia, Thales