

## RESEARCHER

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Université de technologie de Compiègne is seeking to fill a postdoctoral research position for the research unit AVENUES EA 7284, department GSU.

### Place of work

Compiègne UTC, AVENUES and STELLA platform (innovation center)

### Type of contract and anticipated starting date

Fixed term for 13 months

### Experience

This position would represent an initial professional experience for someone who has recently obtained his or her PhD.

Professional experience required:

The candidate must have a PhD in electrical engineering.

The candidate must have experience in international project. Management experience in such a project would be a plus.

A very good level of English (oral and written) and communication skills are mandatory.

For the technical / scientific part, very good knowledge and experience in decentralized electrical energy production systems and / or in the control of photovoltaic energy sources are necessary at the level of engineering and research.

The candidate must provide the names and contacts of 2 or 3 referees.

### Gross monthly salary

€ to be defined

### Workload

1 607 hours per annum

### Mission and context

The successful candidate will work on the T-IPV project "Integration of photovoltaic sources in road transport solutions" and more particularly on the intelligent charging of electric buses with photovoltaic energy.

The T-IPV project is the French proposal as a contribution to Task 17 - PV and Transport of the IEA program of technological collaboration PVPS (IEA - International Energy Agency in English). This project aims to study on-board and stationary photovoltaic (PV) energy and power in transport. Two main topics are highlighted:

- Benefits and requirements for electric vehicles (EVs) powered by on-board PV generators;
- Systems and infrastructures equipped with stationary PV sources used for the intelligent recharging of EVs (intelligent infrastructure for recharging EVs - IIREVs).

Through a state of the art of scientific and technical solutions combined with feedback from industries, including social acceptability, the French project Task 17 - PV and Transport - offers a set of methodologies, tools for evaluation, dimensioning and regulation of on-board and stationary PV systems for EVs, and associated V2X-type services (vehicle to grid, to home, etc.)

### Principal activities

The recruited person will share activities as follows:

**1. part-time (approx. 25%) as Project Manager.**

For this, the candidate will:

- assist the Project Coordinator in:
  - supervising the technical progress of the project (monitoring of milestones and deliverables)
  - communication and interaction with foreign partners and the Project Coordinator of the IEA PVPS T17 program
- ensure efficient communication flow among the project partners, and with the administration of UTC and the ADEME (funding body)
- organize the project meetings (logistics, agenda, registration, gathering of preparatory documents and material, minutes)
- supervise the technical and financial reporting of the project every 6 or 12 months (compiling the activity reports by each partner, supervising the partners' financial reporting)
- create and maintain a website dedicated to the project and a shared Cloud dedicated to the consortium ("sharepoint" type with deliverables, state of the art, meeting presentations, ...)
- participate to the communication and dissemination activities of the project (project presentation at workshops, representation in conferences, social media posts).

**2. part-time (approx. 75%) as postdoctoral researcher or research engineer.**

For this, the candidate will join the research team for activities in accordance with the T-IPV project and microgrids. More precisely, electrical microgrids are a set of heterogeneous sources of electrical energy production (renewable, traditional including storage) and controllable loads, each with its own individual constraints (variable or dispatchable, limited in energy and / or in power).

The recruited person, under the supervision of two researchers, will have the following tasks as main activities:

- Study on the feasibility, barriers, and solutions of electric buses powered by stationary and on-board PV sources; analysis of possible contributions and benefits provided;
- Characterization of new V2X type network services and their benefits;
- Technical and functional specifications of a tool for accessing the services offered;
- Analysis of the public grid impact;
- Dissemination and dissemination through publications, symposia, scientific conferences, and webinar, website, etc.

### **Qualification**

The candidate must have an engineering and / or master's degree in electrical engineering. He (She) must hold a PhD in electrical engineering with skills in numerical modeling under MATLAB Simulink, in control-command of electrical systems, real-time control dSPACE or equivalent, real-time simulation (Hardware-in-the-Loop), and in experimental validation. System optimization skills will be highly appreciated.

### **Work environment and context**

In terms of human resources, currently two researchers and two PhD students are working on the subject and in the operation of the STELLA platform dedicated to IIREVs.

### **Academic contact:**

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Director of the AVENUES research unit and coordinator of the PV2E\_Mobility project

CV and covering letter to be uploaded to: <https://candidature.utc.fr/chercheur>

For any additional information please contact:

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