18 Boulevard Thomas Gobert
91120 Palaiseau
FRANCE

IPVF Job Offer

MISSION TITLE

Senior postdoc position on III-V solar cells for high-efficiency and low-cost photovoltaics

POSITION DESCRITPTION

Function	Research engineer	**Reference :**	(réf de la demande de recrut)
Contract type	Fixed-term	**Duration**	36 months
Starting date	As soon as possible	**Education**	Ph.D
Working Place	Palaiseau, Paris area	**Salary**	Profile dependent

IPVF IN BRIEF

The "Institut Photovoltaïque d'Île-de-France" IPVF aims at becoming one of the main global research, innovation and education center in the field of photovoltaic solar energy. Composed with international well-known industrials, leading in PV industry (EDF, Total, Air Liquide, Horiba and Riber) and academic research teams (CNRS, Ecole Polytechnique), IPVF wants to increase performances and competitiveness of PV solar cells and develop new breakthrough technologies thanks to:

- A research program: 5 programs and 12 projects
- Experimental laboratories open to PV actors: more than 70 state-of-the-art tools, in a dedicated IPVF building
- Education program with a master and PhD students

JOB CONTEXT

- The Ile-de-France Photovoltaic Institute (IPVF) and the Center for Nanoscience and Nanotechnology (C2N-CNRS, SUNLIT team) are seeking several postdoctoral researchers to work on III-V solar cells for high-efficiency and low-cost photovoltaics. The projects will be carried out in close collaboration between the two institutes.
- Our team has recently demonstrated ultrathin (200 nm) GaAs solar cells with a record efficiency of nearly 20% using efficient light trapping, in collaboration with Fraunhofer ISE (published in Nature Energy, 2019, https://www.nature.com/articles/s41560-019-0434-y). We have also developed state-of-the-art, wide-bandgap (1.7-1.8eV) solar cells made of AlGaAs for integration in III-V/Si tandem solar cells (to be published), and we have recorded important advances in nanowire-based solar cells (https://sunlit-team.eu/news/advances-in-nanowires-for-pv/). These results have opened new opportunities for the development of low-cost and high-efficiency photovoltaics based on tandem III-V/Si architectures and advanced concepts (hot-carrier solar cells in particular).

MAIN MISSIONS

- We are looking for a postdoc who will be in charge of the epitaxial growth and fabrication of wide-bandgap III-V solar cells. We have an ambitious roadmap that includes the improvement of quality of III-V materials, novel heterostructure architectures, the fabrication of transferred solar cells with state-of-the-art efficiencies, and their integration in III-V/Si tandem prototypes.
- The post-doc will benefit from a multidisciplinary environment and will have access to the unique, complementary clean-room facilities at IPVF and C2N including state-of-the-art epitaxy, nanofabrication and characterization tools. More information and recent publications from the C2N team can be found here: http://sunlit-team.eu/
- The ideal candidate will have a PhD in material science, semiconductor physics or related, with a previous experience in epitaxy of III-V semiconductors.
- The positions will start immediately for 18 months. Applications will be reviewed as received until the position is filled.

SOUGHT PROFILE

Knowledge	Knowhow	Self-management skills
▪ physics of semiconductors ▪ epitaxy of III-V ▪ nanotechnology	▪ epitaxy of III-V ▪ fabrication process of III-V devices ▪ modeling	▪ team spirit ▪ selfinitiative and creativity

CONTACT

Cover letter and résumé to be sent to: stephane.collin@c2n.upsaclay.fr, andrea.cattoni@c2n.upsaclay.fr