

September, 2022

**Research Position Available
at the Group of III-V Semiconductors on**

**Flexible and lightweight III-V multijunction solar cells
enabling high power density applications**

INTRODUCTION

The use of photovoltaic solutions in large greenhouse gas emitters such as the transport sector remains incidental. Technological alternatives are needed that provide solar cells adapted to these markets demanding PV devices with high efficiency, low mass and flexible to be able to line curved surfaces. Applications such as electric vehicles, wearables and some unmanned aircrafts (i.e. drones, stratospheric balloons, pseudo-satellites,..) represent a great opportunity to expand photovoltaic solutions, but require power to mass ratios equal to or greater than 1 kW/kg, unreachably by today's mainstream crystalline silicon photovoltaic technology. This project will develop III-V semiconductor multijunction solar cells to achieve power-mass ratios of till 3 kW/kg.

The **III-V Semiconductors Group at the Solar Energy Institute** of the Universidad Politécnica de Madrid (http://www.ies.upm.es/Investigacion/IES_GI/S_III_V) is a world leading research group in the field with an experience of more than 20 years. The activity of the III-V Semiconductors Group covers the whole value chain of the flexible solar cells (design, manufacturing and characterization) and also their integration in flexible modules.

SCOPE

The work proposed will be framed within the “State R+D+I Program Oriented to the Challenges of Society” **funded by the Spanish Research Agency**. The tasks to accomplish will be focused on the development and manufacturing of flexible solar cells together with the formation of flexible modules and it includes the design, experimental manufacturing and electro-optical characterization.

REQUIREMENTS

- A degree plus a master in Physics, Electronic Engineering or Materials Science
- Basic knowledge on semiconductor physics, device physics and electronic materials.
- Good academic record (above 7.5/10)
- Great motivation for scientific work and ability for team work
- Full proficiency in English and basic knowledge of Spanish (or commitment to get it!) for foreign students. The full proficiency in English also applies for Spanish native speakers.
- Starting date in November of 2022.

GENERAL CONDITIONS

- The selected candidate would start the work in our group with a contract within the frame of a project of “State R+D+I Program Oriented to the Challenges of Society”.
- The research work could crystalize in a doctoral thesis
- Excellent experimental infrastructure with unique facilities in Spain and international atmosphere.
- Attendance to scientific conferences worldwide
- Research stays in partner labs in Europe and/or the USA

APPLICATIONS

Interested candidates should send his/her CV and transcripts of all graduate and master coursework to Prof. Carlos Algora (carlos.algora@upm.es). **Deadline: 20 October 2022**

