

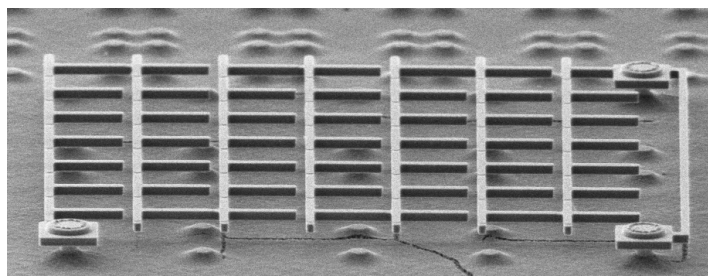
## Short-Term Contract – Engineer Position

<b>Position</b>	: Short-Term
<b>Duration of the contract</b>	: 18 months
<b>Starting Date</b>	: October 2016
<b>Scientific Area</b>	: Physics / Solid State Physics / Electromagnetism
<b>Education (minimum level)</b>	: Graduate
<b>Professional Experience</b>	: Beginner up to 4/5 years of experience
<b>Language</b>	: English / French

### Job description :

The bolometer group belongs to the Space Spectral Imagers Lab (LSIS) at CEA-Saclay Astrophysics Division in France. We develop cryogenic bolometers for submillimeter waves (100 microns to 1mm), in collaboration with CEA-LETI in Grenoble. We are involved in several astrophysics and cosmology projects that require an improved sensitivity of the detectors compared to the ones developed for the previous generation (Herschel and Planck space projects for example).

In the framework of the French Labex FOCUS, during the first phase of our developments (2013-2014), we demonstrated the feasibility of the new technological process, we validated the structural design of polarization sensitive pixels and we started to produce very high-sensitivity thermometers. Now, we focus on a prototype array for mm waves with polarization detection capabilities. In order to get the most appropriate thermometer inside the pixels, we must determine the optimum doping of the thermometric material, by performing impedance measurements down to 50 mK. These tests will be made on dedicated tests chips. Together with a team of physicists, engineers and students, the applicant will be in charge of the measurement process as well as its analysis (Mott and Efros electrical conduction regime). Then, (s)he will participate to the characterization of the prototypes of the bolometer arrays.



MEB picture of a new generation bolometer (pixel), developed by LETI in Grenoble.

**Requirements :**

- PhD or Master degree in physics or solid state physics.
- Good knowledge of superconductivity principles and cryogenic technics.
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