

REF: PsD-DRT-19-0115



APPLICATIONS & SOCIETAL IMPACT

NANOCHARACTERISATION

ADVANCED
MICROELECTRONICS

TOF-SIMS
CHARACTERISATION
TANDEM MS
MICROELECTRONICS

Requirements: PhD
Contract Period: 1 yr renewable +
1 yr for a total of 2 yrs
Start date: Oct 2020
Workplace: Grenoble

Advanced tandem time-of-flight mass spectrometry for microelectronic applications

CONTEXT

CEA LETI seeks to recruit a post-doctoral researcher to work on the development of advanced time of flight secondary ion mass spectrometry applications (TOF-SIMS). The candidate will work on a new TOF-SIMS instrument equipped with tandem MS spectrometry, in-situ FIB and Argon cluster sputtering. The candidate will also have access to the wide range of state of the art instruments present on the nanocharacterisation platform as well as bespoke samples coming from the advanced technology branches developed at the LETI. The candidate will also benefit from a collaboration with the instrument supplier.

ABSTRACT

The research project will be focused around the following topics: 1) Developing methods to correlate TOF-SIMS with AFM, XPS and Auger. This will include localisation of the same area, use of a transfer capsule and data treatment aspects. 2) Improving the sensitivity and fragmentation efficiency of the tandem MS spectrometer, this aspect will involve increasing the efficiency of fragment ion production using different collision gases 3) Developing 3D FIB-TOF-SIMS applications and improving the spatial resolution for TOF-SIMS imaging.

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