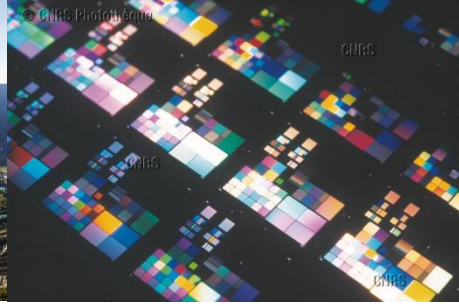


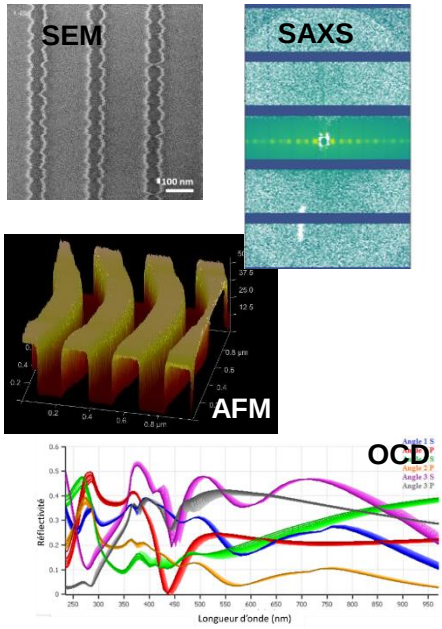
Master 2 internship offer

Multi-technique dimensional metrology for micro & nano technology applications

Mots clés: Dimensional metrology, hybrid metrology, CDSEM, CDSAXS, OCD, AFM, data processing, silicon wafer

Context :

In the field of nanotechnology, the reduction in the size of patterns as well as the increase in their geometric complexity makes the dimensional metrology step critical. Conventional techniques such as SEM, AFM or OCD, although performing well on some aspects, show their limits to deliver a robust result. The subject proposed here is positioned in an approach of hybridization of metrology techniques in order to improve this robustness. On data processing aspects, hybridization requires powerful data fusion tools based on machine learning approaches. In terms of experimental development, the approach developed here takes into account the contribution of the CDSAXS technique. This metrology using X-rays and previously only available on synchrotron lines, is gradually becoming more and more popular with the development of "bench-top" equipment. The samples on which the measurements will be carried out correspond to reference standards. The targeted dimensional parameters are height, width or edge inclination. The hybridization of techniques will be done by the development of machine learning tools.



Signatures obtained with different techniques

Objective :

In this context, the objective of the Master internship is to meet the need for metrology of silicon samples on 300mm wafers. The work will consist in developing the experimentation campaign on the different equipments as well as setting up an efficient processing of the raw data from the different techniques. For this, the candidate will have to show a strong interest in experimental development and have a background in computer code development.This internship will be carried out in close collaboration with the CEA-LETI teams, at the heart of their technological tools.Translated with www.DeepL.com/Translator (free version).

Laboratoire d'accueil:
Laboratoire des Technologies de la Microélectronique (LTM/CNRS)
17 avenue des martyrs
38054 GRENOBLE cedex 9

- ✓ **Formation Requise: M2**
- ✓ **Durée: 6 mois**
- ✓ **Début: mars 2021**

POSTULER

Envoyez votre candidature avec CV à : maxime.besacier@cea.fr