Since the last years, Focused Ion Beam (FIB) has been growing in popularity as a micro- and nanofabrication tool, especially because it has shown exceptional capabilities and very high precision in both milling and depositing materials at the nanometer scale. Being a sputtering (physical) process, milling by FIB can be realized over a wide variety of materials. On the contrary, deposition involves a chemical reaction able to decompose a metalorganic chemistry and evaporate its volatile compounds leaving just the solid molecules. Then, this process takes place following an ion-assisted chemical vapor deposition (IACVD) procedure, which does not ensure high purity for the obtained material, as organics and even the ions of the focused beam can contaminate it.

Among the materials deposited using a FIB, Pt is one of the most frequently used for making conductive and protective layers. As a particular application, Pt strips produced by this method are now suitable to act as nanoelectrodes that can be used in the fabrication of many types of devices. Nevertheless, chemical and electrical properties of this IACVD-Pt have not yet studied in depth. On the other hand, the knowledge of the temperature influence in these properties is very interesting for reliable device design.

In this work, a preliminary morphologic, chemical and electrical characterisation of the IACVD-Pt strips obtained using FIB will be presented and compared with those obtained via electron-assisted CVD. Depositions have been realized with a FEI Strata 235 Dual Beam machine from the University of Barcelona, using Ga+ ions accelerated to an energy of 30 keV and Pt(COH)$_6$ as gas precursor. Different experimental conditions are tested for deposition, as well as several thermal treatments generally used for stabilization. Characterization will be performed using techniques like Secondary Electron Microscopy (SEM), Atomic Force Microscopy (AFM) or Auger Electron Spectrometry (AES). Surface morphologies, cross sectional views, chemical compositions and electrical resistivities, before and after annealing, will be presented and discussed. The conclusions obtained could be used in the future in order to design and produce nanodevices with FIB, as the have shown to be suitable as nanoelectrodes for nanodevices as biosensors.
Figures:

**Figure 1.** SEM image of a very narrow IACVD-Pt strip obtained with FIB

**Figure 2.** AFM image of three lines of Pt deposited with FIB