

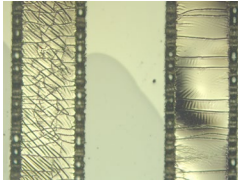
## Comparison of different metals and deposition techniques on PDMS for neural interface electrodes

### Purpose (aims/objectives)

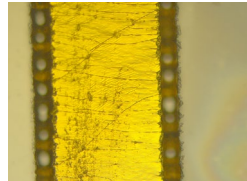
The goal of this project is to examine the characteristics of various thin metals and deposition techniques on PDMS, to determine their suitability as neural interface electrodes. Since these electrodes will interface with flexible nerves, it is essential to study their stretchability when implanted to ensure that they retain good electrical properties for proper functionality. Different methods will be explored to find the most appropriate deposition techniques and materials. Although thermal evaporation is the standard technique, sputtering deposition will be tested at different temperatures during the project. Gold and platinum will be tested as materials.

### Results, findings, additional details

Gold is commonly used in the literature, but platinum is a better material due to its inertness, high biocompatibility, and electrochemical properties. Platinum samples seem to be less resistant to stretching than gold, and this depends on the cracking profile of the deposition, which can enhance macrocrack growth during stretching.



Pt deposition profile



Au deposition profile



Chiara Antonini  
263272@usn.no  
Micro and Nano  
Systems Technology

Supervisor: Kristin Imenes,  
e-mail: [Kristin.Imenes@usn.no](mailto:Kristin.Imenes@usn.no),  
Supervisor: Jairo Sarabia,  
e-mail: [Jairo.Ramirez-Sarabia@usn.no](mailto:Jairo.Ramirez-Sarabia@usn.no)