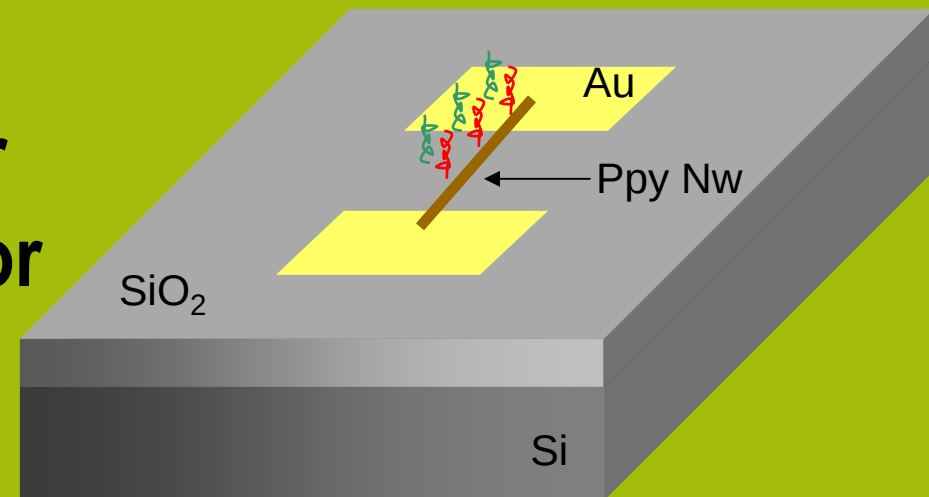




Fabrication of Polymer Nanowires for Biosensor Applications

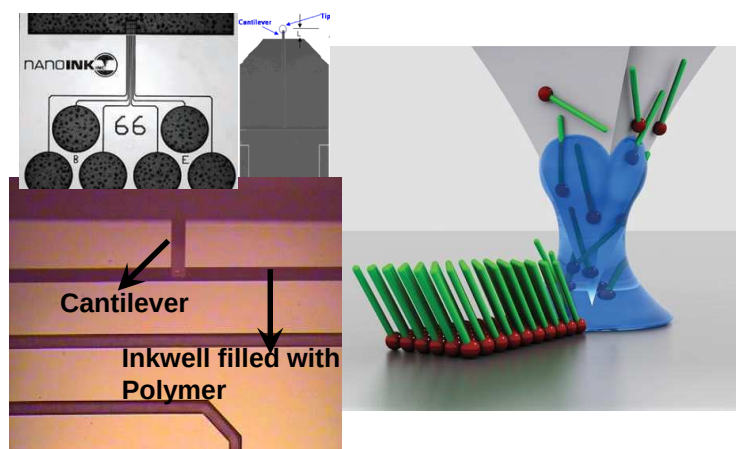


Teresa Galán Cascales

Fabrication of Polymer Nanowires for Biosensor Applications

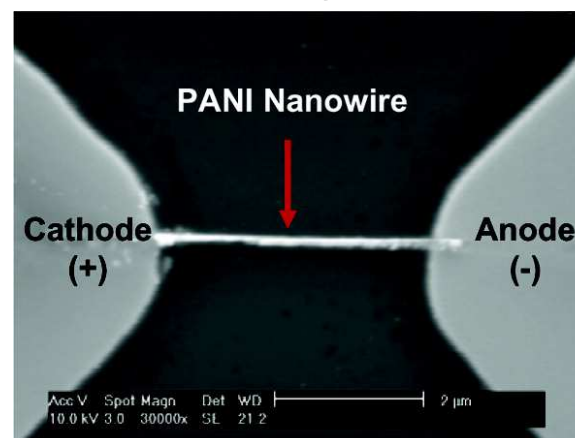
Polymer → DPN

- Already synthesized PPy
- Direct writing method
- Maskless nanolithography
- Parallel method
- No alignment



Monomer → Electropolymerization

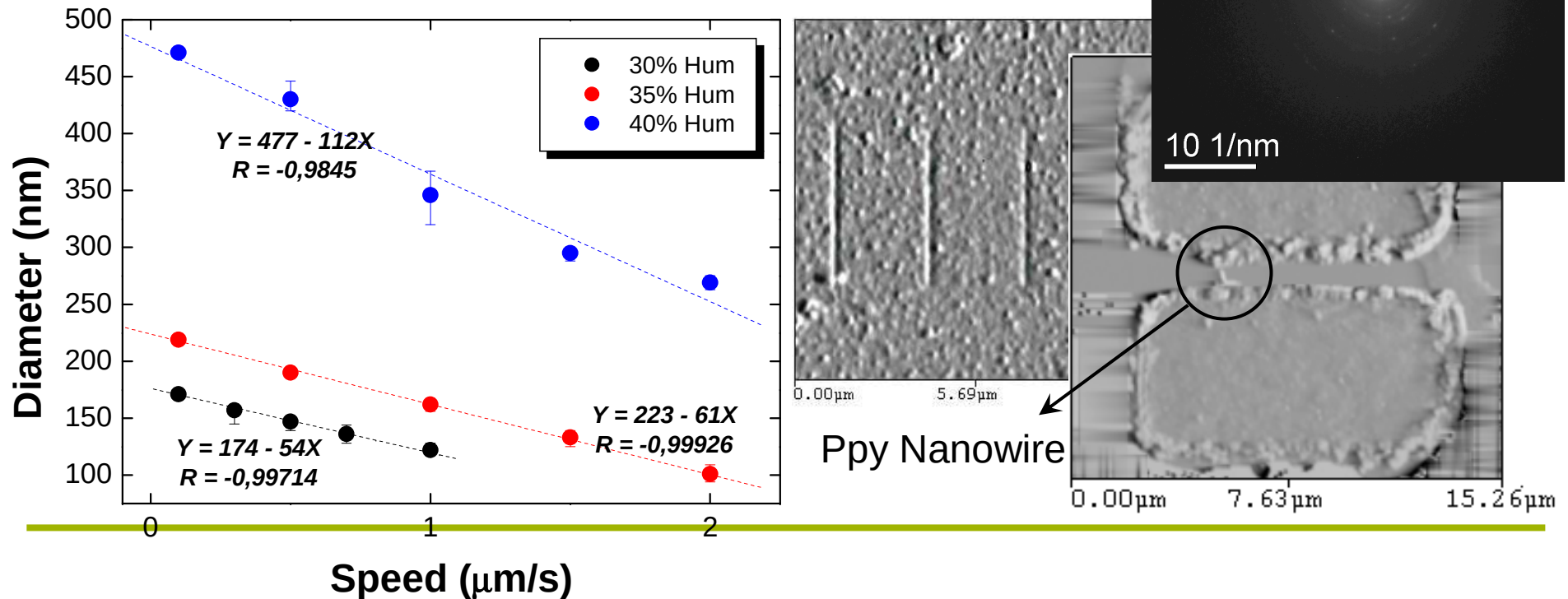
- Use of Pyrrole units + Dopants
- Electropolymerization:
 - Synthesis
 - Functionalization
- Tuning material properties
- Nanometer range



Fabrication of Polymer Nanowires for Biosensor Applications

DPN results

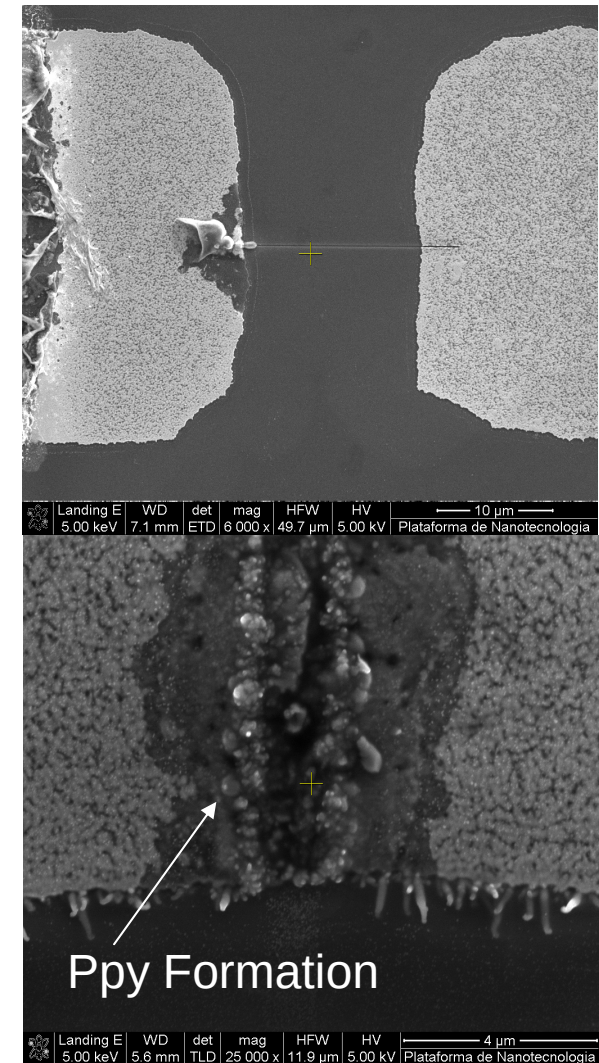
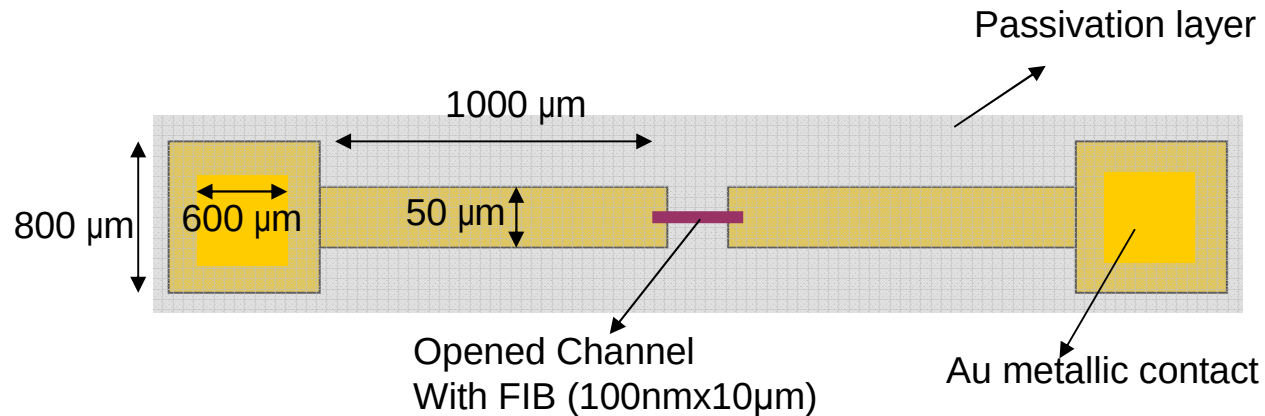
- Controlled-Size deposition of Polypyrrole Nanowires
- Deposition between metallic contacts in accurate way
- Enhancement of crystalline structures and adhesion by means of silane functionalization



Fabrication of Polymer Nanowires for Biosensor Applications

Electropolymerization first results

- Fabrication of electrodes + Channel (FIB)
- Pyrrole monomer + doping counter anion
- Drop on the channel
- Application of constant electrical current



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