CIC nanoGUNE
nanoscience cooperative research center

Nanofabrication @ nanoGUNE

Luis E. Hueso

Nanodevices Group. CIC nanoGUNE BRTA
IKERBASQUE. Basque Foundation for Science

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CIC nanoGUNE BRTA

CIC nanoGUNE BRTA

Private not-for-profit organization devoted to basic and applied research

Operations started January 2009

Nanomagnetism	Nano-Optics	Self-Assembly
Theory	**Nanodevices**	Electron Microscopy
Nanomaterials	Nanoimaging	Nanoengineering

CIC nanoGUNE BRTA

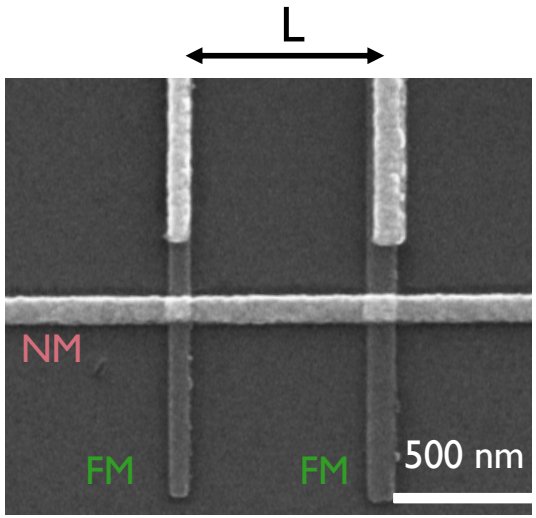
Outline

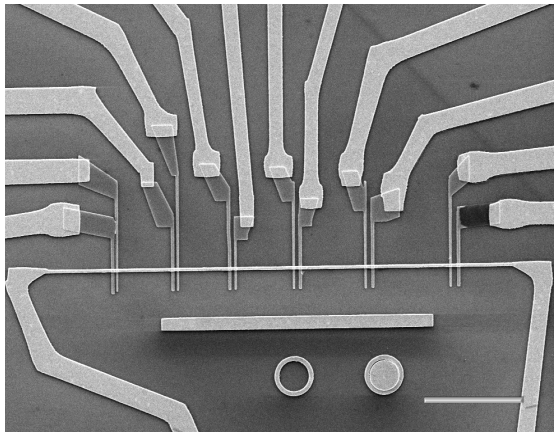
Metal Spin Valves

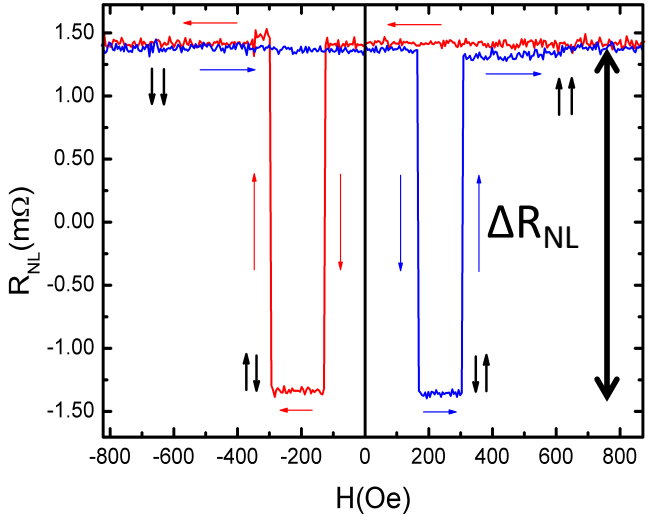
2D Spin Devices

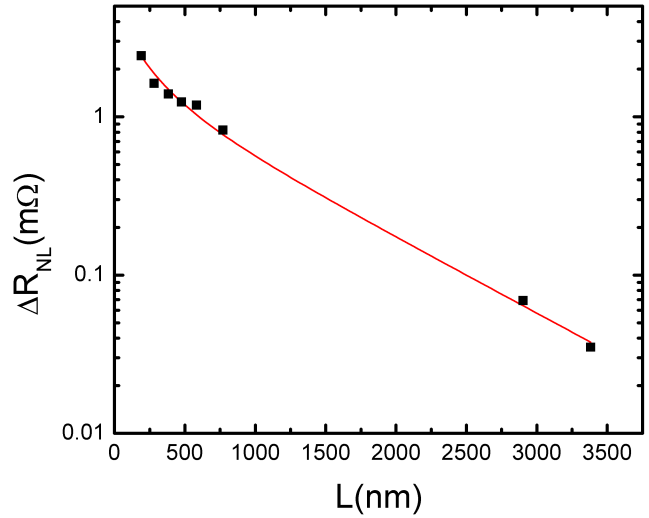
Nano-Optics Devices

Metal Spin Valves

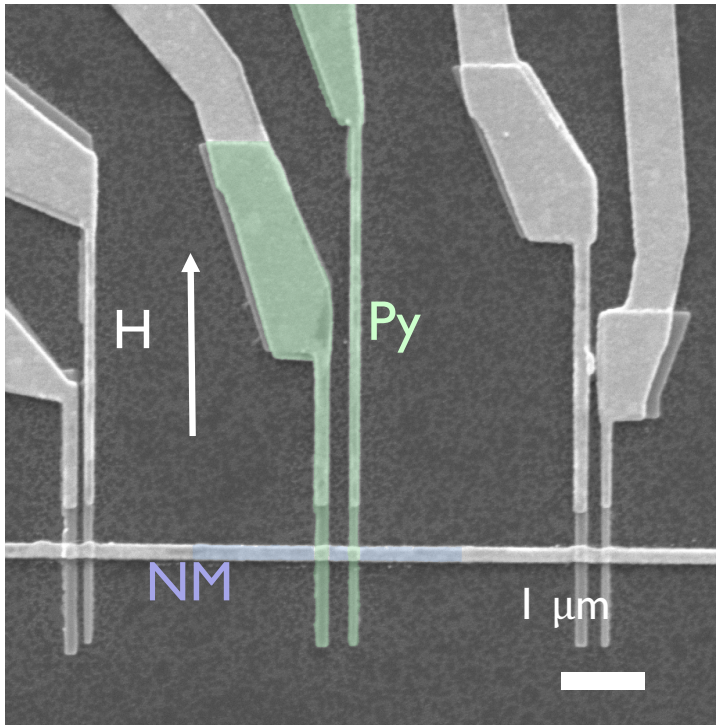


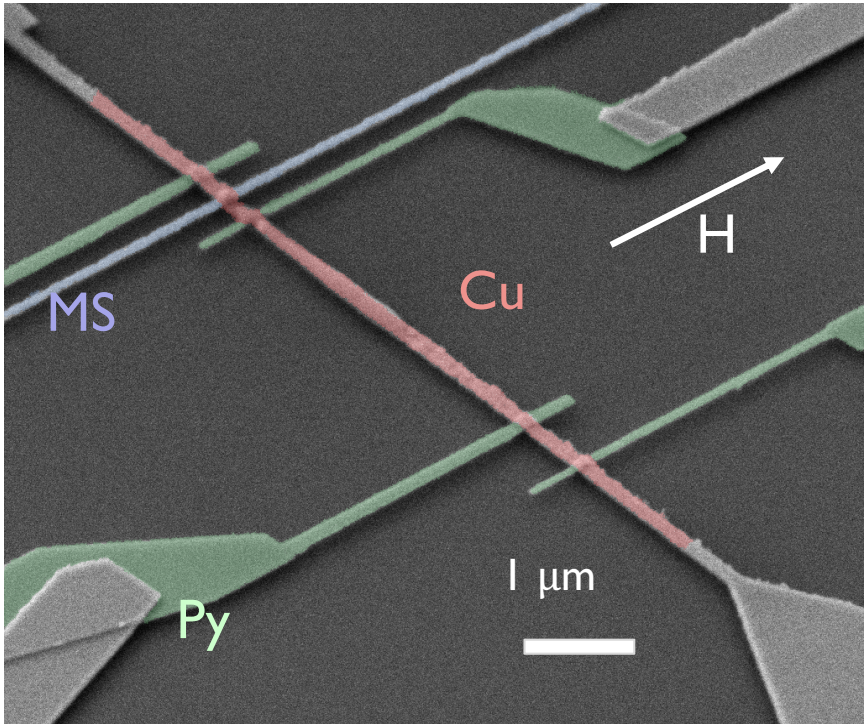






Metal Spin Valves





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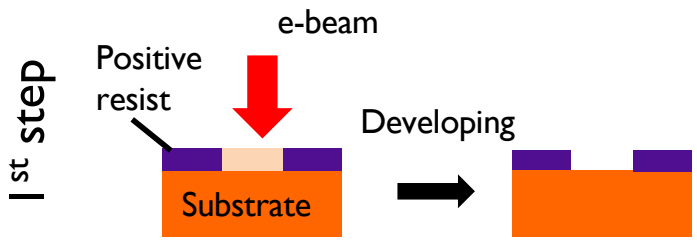

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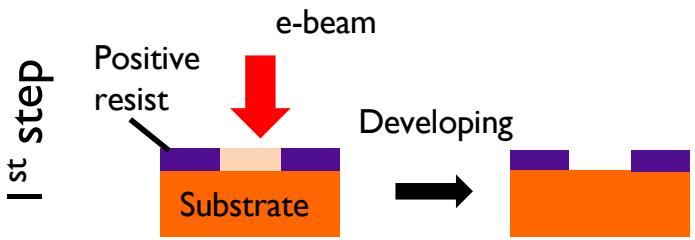

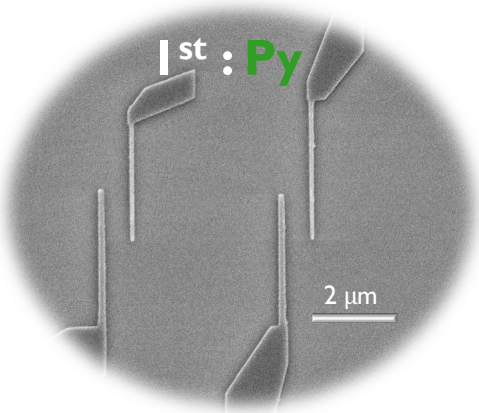

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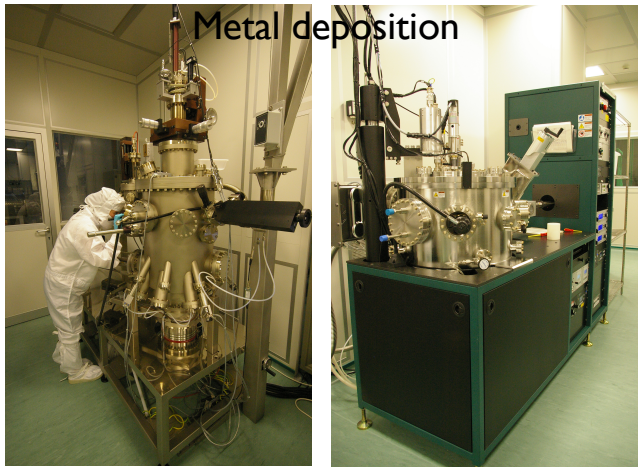
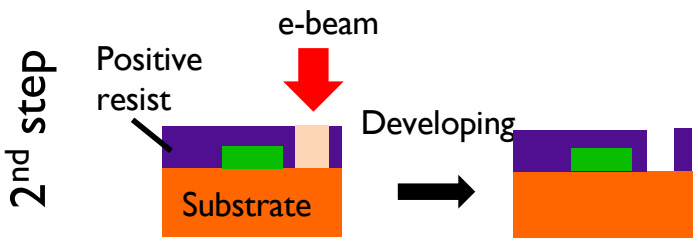
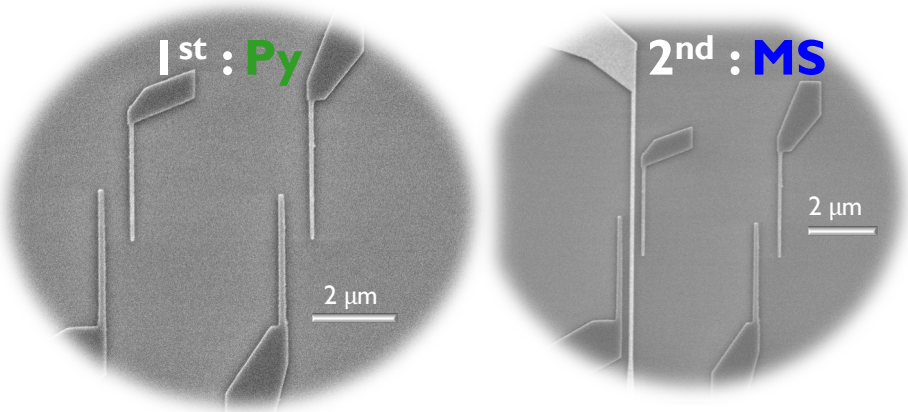
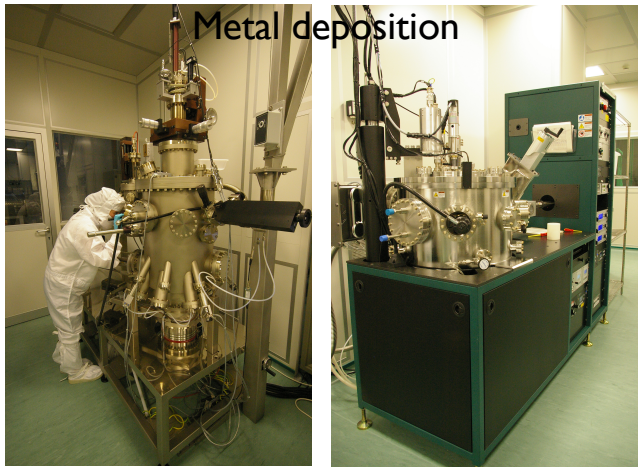


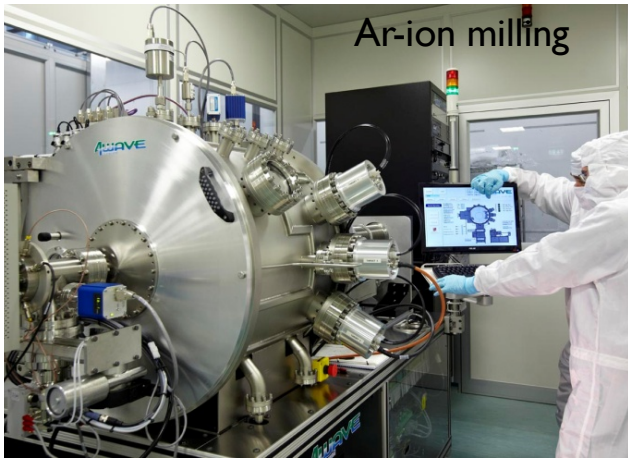


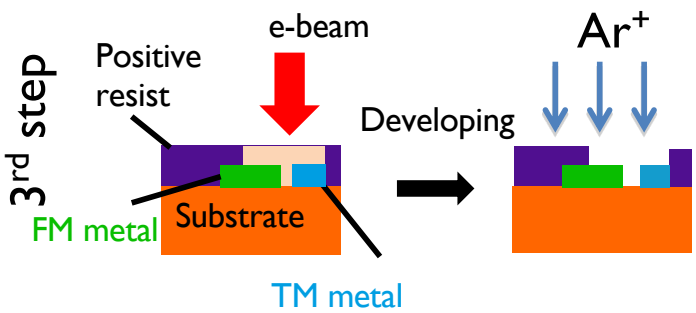


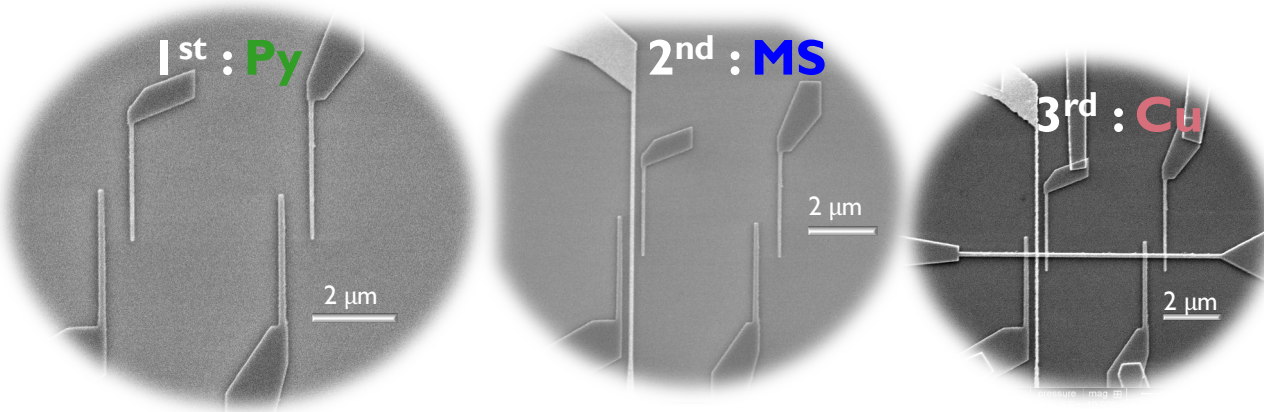
Metal Spin Valves

3 step electron-beam lithography and deposition process

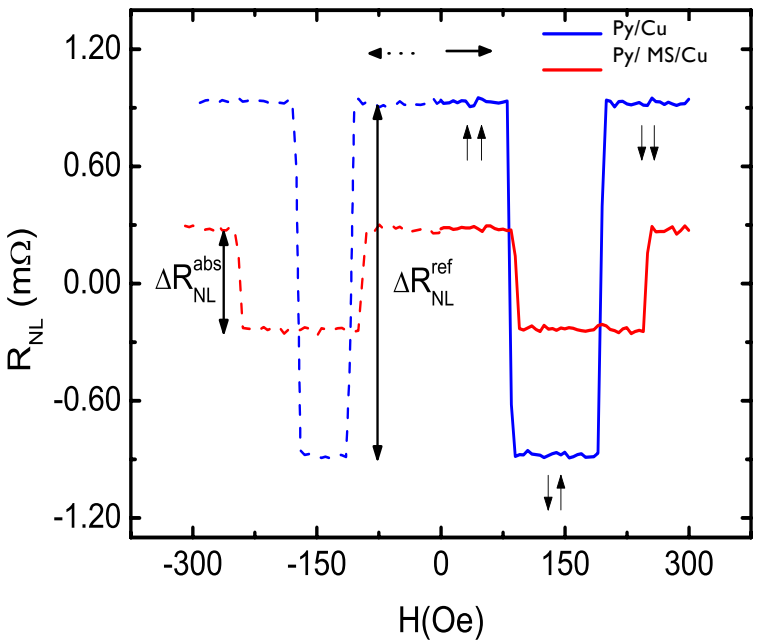


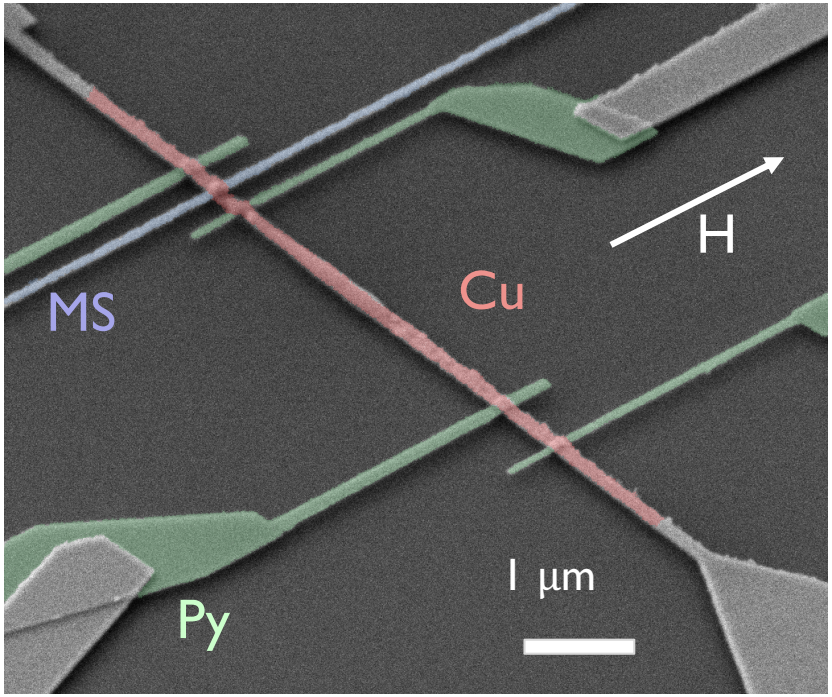






Metal Spin Valves





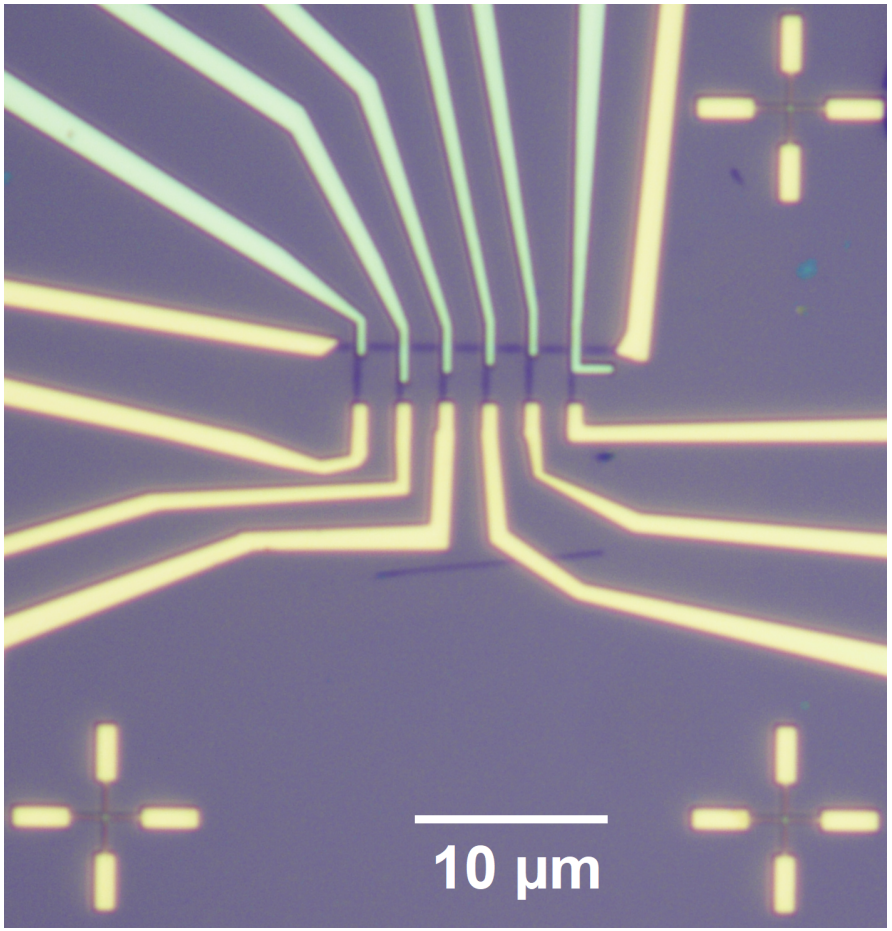
Outline

Metal Spin Valves

2D Spin Devices

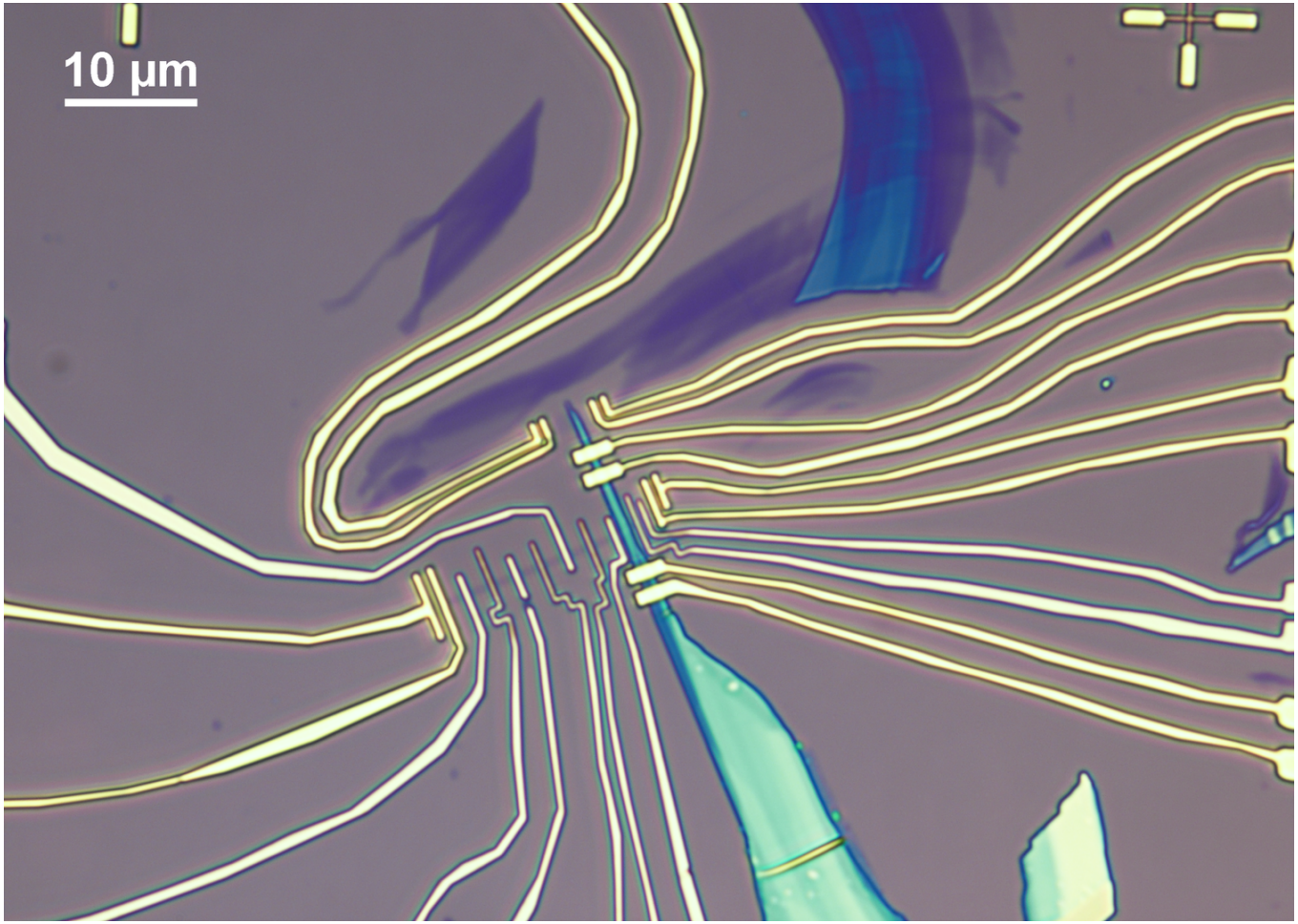
Nano-Optical Devices

2D Spin Devices



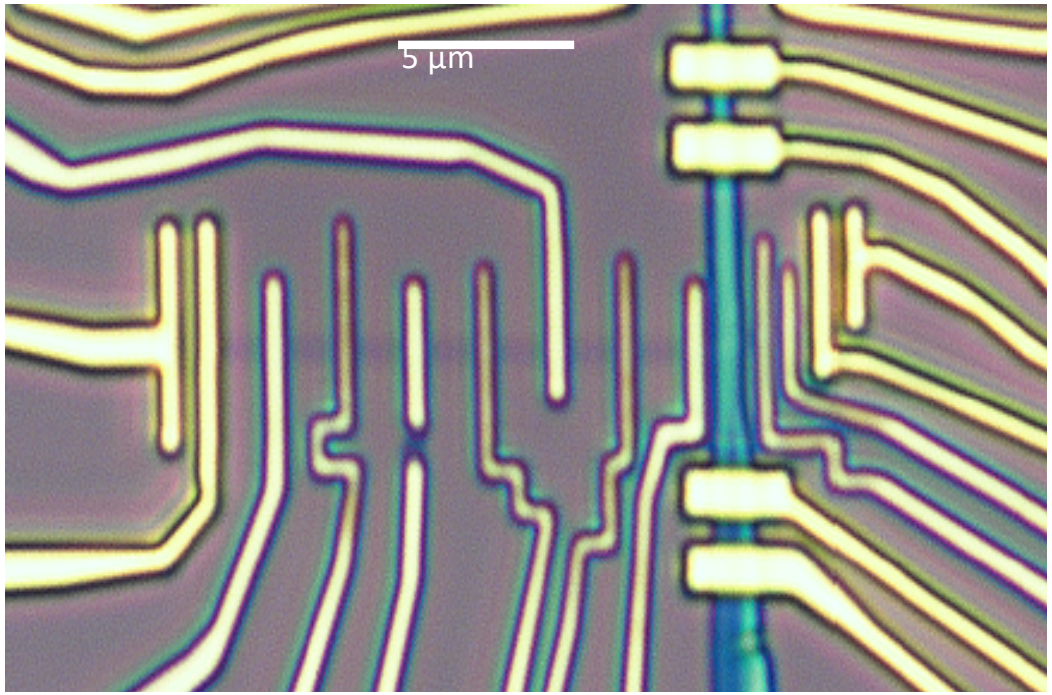
Local device with an etched graphene channel and multiple Co electrodes and Au contacts

2D Spin Devices



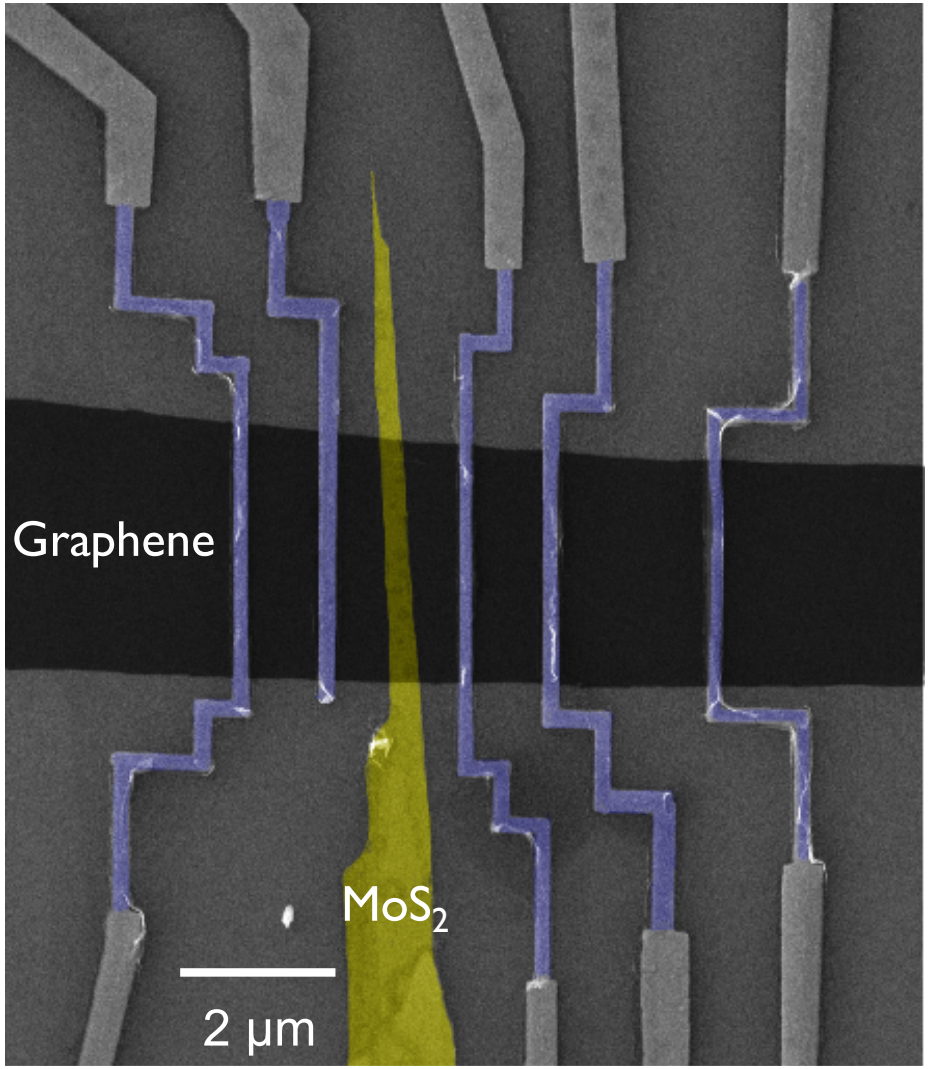
Graphene / $MoTe_2$ heterostructure with multiple Co and Au electrodes

2D Spin Devices



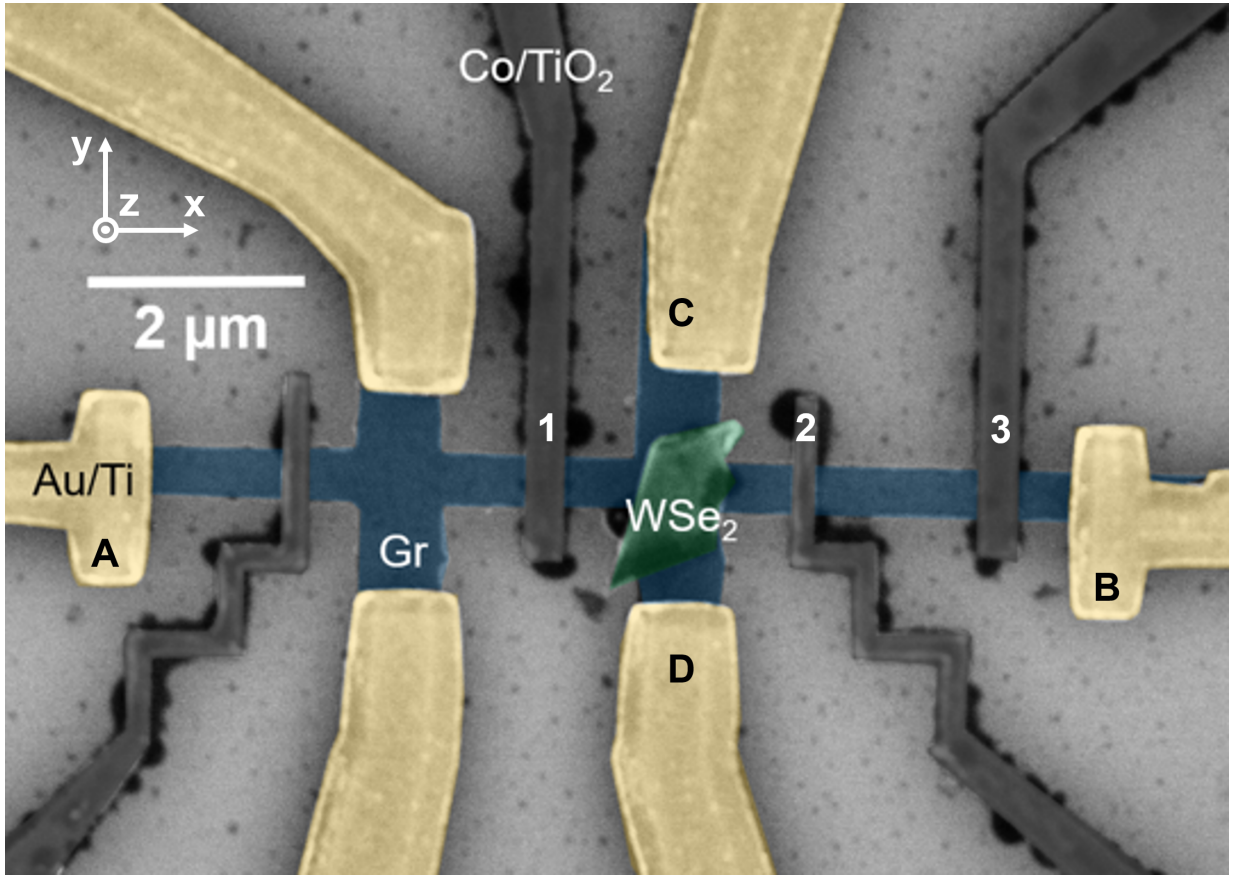
Graphene / $MoTe_2$ heterostructure with multiple Co and Au electrodes

2D Spin Devices



Graphene / MoS_2 heterostructure with multiple Co and Au electrodes

2D Spin Devices



Graphene / WSe_2 heterostructure with multiple Co and Au electrodes

Outline

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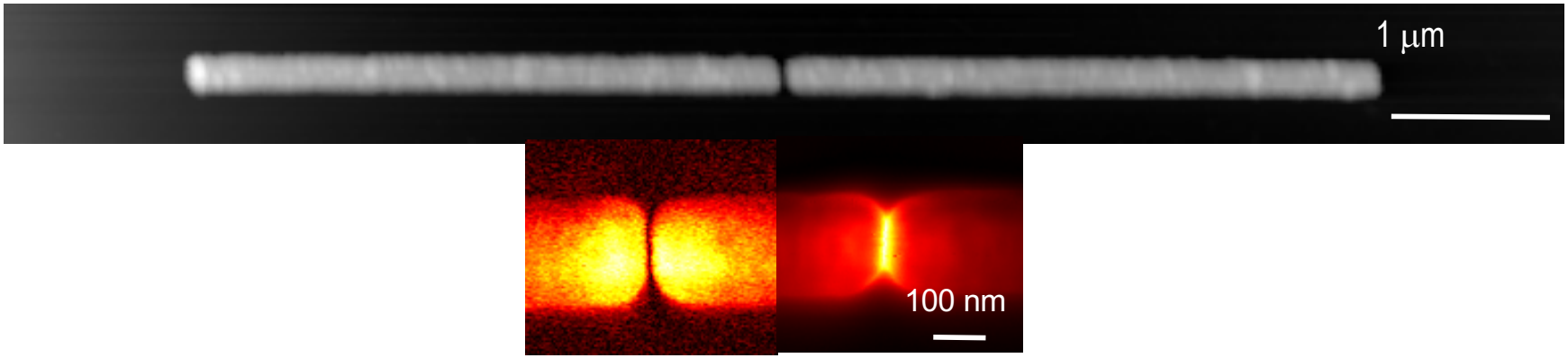
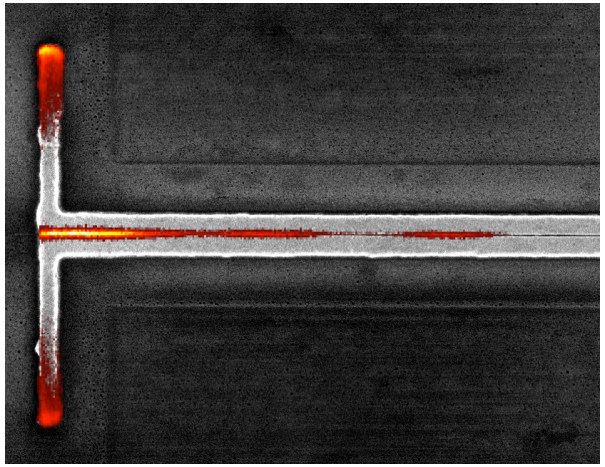
2D Spin Devices

Nano-Optical Devices

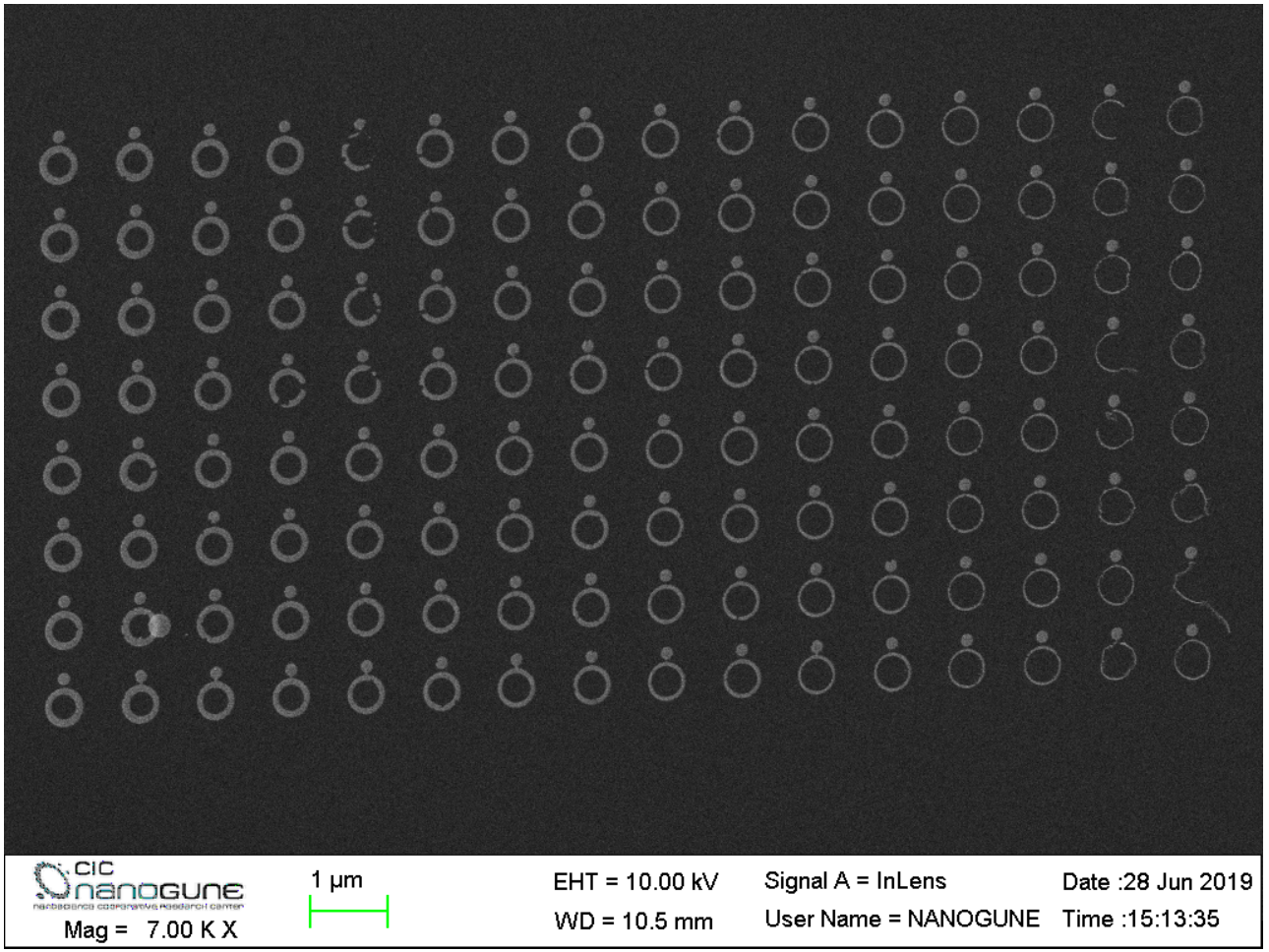
Nano Antennas





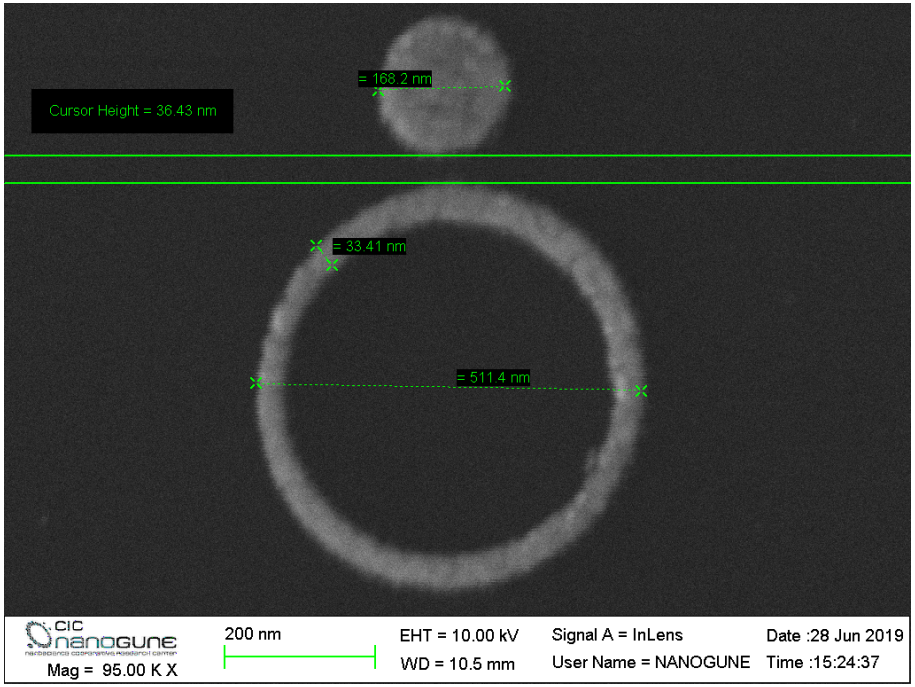
Antennas and transmission lines for nanoscale photonics

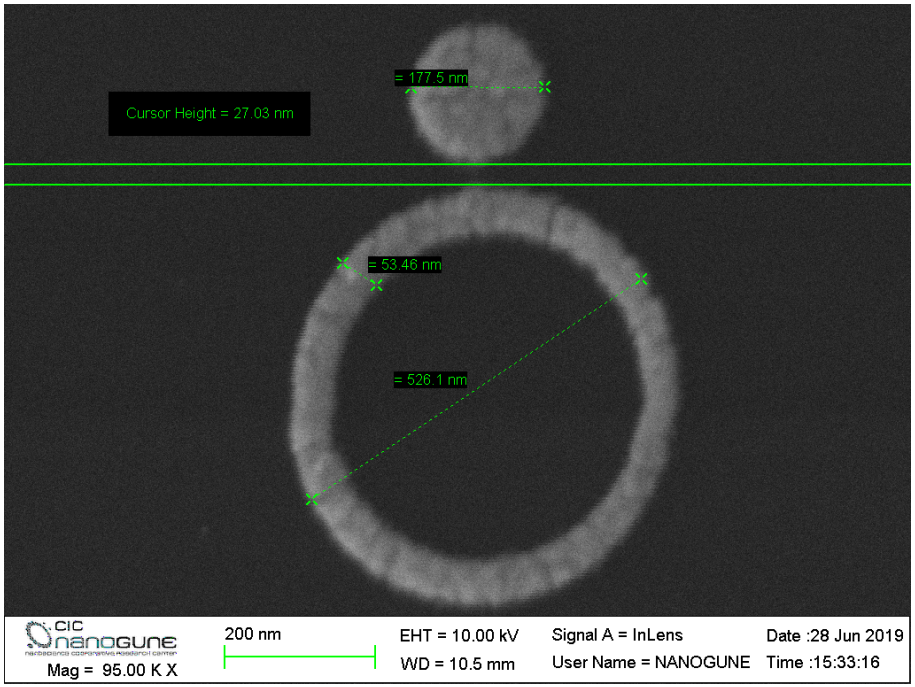
Nano Resonators



Nanoscale magnetic resonators for magneto-optic and EELS experiments

Nano Resonators





Nanoscale magnetic resonators for magneto-optic and EELS experiments

Thanks for your atention!!

Some references in which nanofabrication plays a key role

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