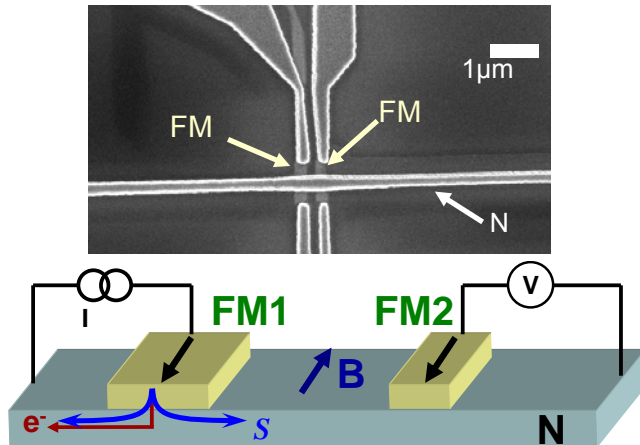


# Spin Transport in Ferromagnet-Normal Metal Nanostructures

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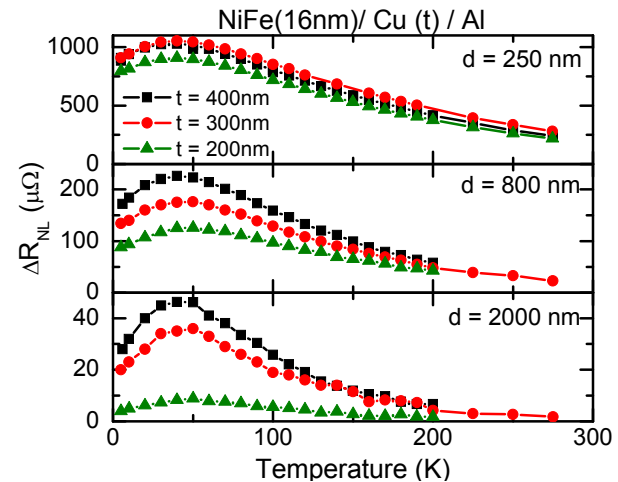
- Spin transport lateral ferromagnet-normal metal spin valves
  - ◆ Fabrication of nanostructure template by e-beam lithography
  - ◆ UHV deposition of both metallic layers without breaking vacuum
  - ◆ Different contact separations on a single wafer
  - ◆ Low-noise measurements



SEM micrograph and schematic of a non-local spin valve of permalloy ( $Ni_{0.81}Fe_{0.19}$ ) and Al

## Major Observations

- ◆ Measurement of spin valve and Hanle effects for different combinations of ferromagnetic and normal metals
- ◆ First measurements over a wide range of temperatures
- ◆ Determination of spin diffusion lengths and interfacial polarizations
- ◆ Observation of strong surface-induced spin scattering in the normal metal



Non-local resistance of a NiFe/Cu spin valve for different contact separations and film thicknesses