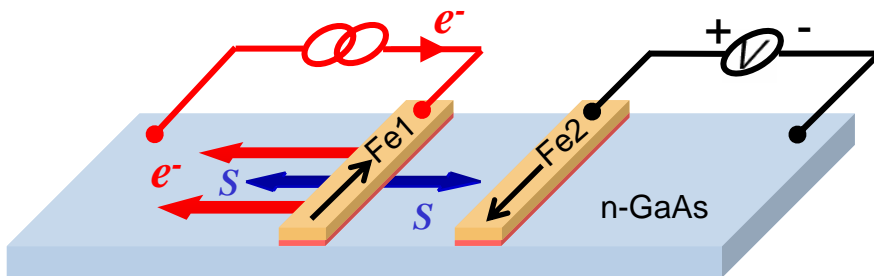


# Spin Transport in Ferromagnet-Semiconductor Structures

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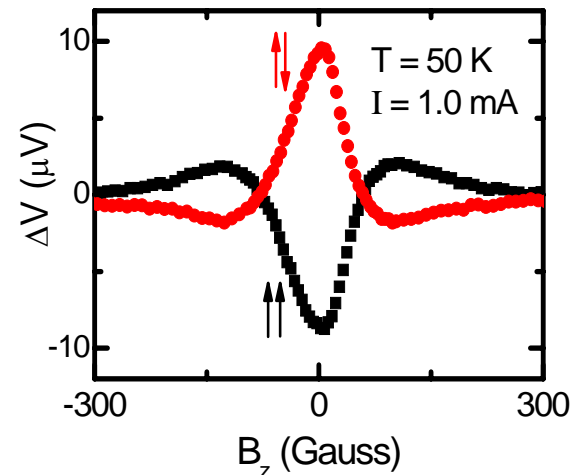
- Non-local spin detection geometry and experimental setup (as shown in the cartoon)

- ◆ Lateral Fe-GaAs devices are fabricated using photolithography, wet/dry etching, PECVD, e-beam evaporation, and liftoff
- ◆ Non-local spin detection enables the separation of spin and charge current
- ◆ Spin polarization injected from Fe1 is detected by Fe2



- Electrical detection of spin transport in Fe-GaAs devices

- ◆ Spin precession effect, the Hanle effect, is demonstrated to prove electrical spin detection
- ◆ The experimental results agree with spin drift-diffusion model incorporating spin relaxation and precession



- Publications

- ◆ X. Lou, C. Adelman, S. A. Crooker, E. S. Garlid, J. Zhang, K. S. Madhukar Reddy, S. D. Flexner, C. J. Palmstrøm, and P. A. Crowell, *Nature Physics* **3**, 197 (2007).
- ◆ X. Lou, C. Adelman, M. Furis, S. A. Crooker, C. J. Palmstrøm, and P. A. Crowell, *Phys. Rev. Lett.* **96**, 176603 (2006).