

## Nano-sized SQUID-on-tip for a scanning SQUID microscope

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A novel SQUID design for a scanning SQUID microscope was reported recently by our group <sup>1</sup>. This type of SQUID can be easily manufactured in a simple 3-step deposition process by evaporation of either Al, Pb or Nb without any need of lithography or wet processing. The shape of the SQUID allows approaching a sample's surface within a few nanometers if the SQUID is attached to a standard AFM tuning fork.

The resulting devices have the smallest tip diameter of 75 nm, the flux sensitivity of  $1.8 \mu\Phi_0/\text{Hz}^{1/2}$  and magnetic field sensitivity of  $10^{-7}\text{T}/\text{Hz}^{1/2}$ , which corresponds to spin sensitivity of  $65 \mu_B/\text{Hz}^{1/2}$  for aluminium, and can operate at magnetic fields up to 0.6 T. These parameters make our SQUIDs the world's smallest and also the most suitable for use as scanning SQUIDs to date.

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