

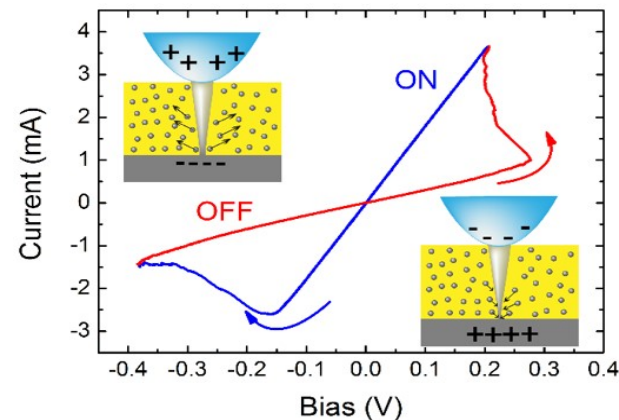
SFB 767 Sonderseminar

Prof. Dr. András Halbritter

Budapest University of Technology and Economics (H)

Atomic-scale resistive switching memories

In my talk I will summarize our recent results on the study of nanometer-scale Ag₂S memristor junctions. Using superconducting Andreev spectroscopy we could estimate both the size and the transparency in both states of the memristive junctions. We could initiate resistive switchings between metallic states with 500 ps pulses by varying the diameter of metallic filament from 2 to 5 nm. On the other hand we have shown that the switching speed slows down exponentially as the driving voltage is linearly decreased, which provides the opportunity for combination of GHz write/erase operations performed at bias levels of a few Volts, non-volatile read-out with slower signals of a few 10 mV and robust information storage at zero bias in a two-terminal analog memory device. We have also studied the role of the junction self-heating and the local asymmetry of the device in the switching process.



Mittwoch 7. Dezember 2016 um 10:00 Uhr in P 1138

Ansprechpartner: E. Scheer, 4712

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