

## **Oscillations of electrical conductivity in single bismuth nanowires**

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Bismuth nanowires were electrochemically deposited in ion track-etched polycarbonate membranes. Single wires with diameters ranging between 70 and 550 nm were created in membranes with one single nanopore and their electrical resistance was investigated while leaving them embedded in the template. The specific electrical conductivity oscillates as a function of wire diameter. The modulations are discussed on the basis of quantum-size effects which lead to a splitting of the energy bands into subbands and, thus, cause an oscillation of the density of states at the Fermi level depending on the diameter.