

Postdoctoral Research Opportunity at NIST: Quantum Information in Si Nano-Transistors

NIST (a government research lab located in Maryland, USA) has a program in researching single-electron tunneling (SET) devices, based on Coulomb blockade. These devices, when operated at low temperatures, give us the remarkable ability to monitor or control the motion of single electrons. The goals of our research are to develop charge and spin qubits for use in quantum computing, and to develop a current standard at the 1 μA level.

We have recently succeeded in making Si-based multi-level nano-transistors which show good stability and Coulomb blockade behavior.

We have an opening for a two-year postdoc position through the Joint Quantum Institute (NIST, Univ. of Maryland) which will entail working on both fabrication and measurements of these devices in the stochastic and quantum coherent regimes. Measurements are typically done with low-noise electronics in a dilution refrigerator.

Those interested in this opportunity should have experience in at least one of the following areas: i) Thin-film lithography and processing (CMOS-compatible processing of MOSFETs would be particularly useful); ii) Quantum information and quantum computing areas of research; iii) Low-temperature, low-noise electrical measurements of nanodevices.

Applications should include a CV and two letters of recommendation. To apply or for inquiries, please contact:

Mike Stewart (NIST)
(301) 975-4690
michael.d.stewart@nist.gov
<http://www.nist.gov/pml/div684/grp02/neil-zimmerman.cfm>

<ftp://ftp.nist.gov/pub/physics/neilz/papers.html>

