BILLING CODE 3510-DS-P

DEPARTMENT OF COMMERCE
International Trade Administration
Application(s) for Duty-Free Entry of Scientific Instruments

Pursuant to Section 6(c) of the Educational, Scientific and Cultural Materials Importation Act of 1966 (Pub. L. 89-651, as amended by Pub. L. 106-36; 80 Stat. 897; 15 CFR part 301), we invite comments on the question of whether instruments of equivalent scientific value, for the purposes for which the instruments shown below are intended to be used, are being manufactured in the United States.

Comments must comply with 15 CFR 301.5(a)(3) and (4) of the regulations and be postmarked on or before (Insert date 20 days after publication in the FEDERAL REGISTER). Address written comments to Statutory Import Programs Staff, Room 3720, U.S. Department of Commerce, Washington, D.C. 20230. Applications may be examined between 8:30 A.M. and 5:00 P.M. at the U.S. Department of Commerce in Room 3720.

Docket Number: 12-058. Applicant: Regents of the University of California, Lawrence Berkeley National Laboratory, 1 Cyclotron Road, MS 46R0125, Berkeley, CA 94720. Instrument: Neodymium Iron Boron (NdFeB) Magentic Block – HXU Model (Vacodym 776). Manufacturer: Vacuumschemelze GmbH & Co KG, Germany. Intended Use: The instrument will be used to study matter on the fundamental atomic length scale and the associated ultrafast time scales of atomic motion and electronic transformation. The NdFeB magnet blocks must be of high magnetic field density to achieve the base spectral range. They must also be of high uniformity in order to achieve Free-Electron Laser (FEL) saturation. In addition to meeting these requirements, the unique capabilities of this instrument are expanded spectral reach, x-ray beams with controllable polarization, and “pump” pulses over a vastly extended range of photon energies to a sample, which are synchronized to the Linac Coherent Light Source II project’s ray probe pulses with controllable inter-pulse time delay. Justification for Duty-Free Entry: There are no instruments of the same general category manufactured in the United States. Application accepted by Commissioner of Customs: December 17, 2012.

Docket Number: 12-063. Applicant: University of Pittsburgh, 4200 Fifth Avenue, Pittsburgh, PA 15260. Instrument: Dilution Refrigerator with 9/2/2T Vector Superconducting Magnet. Manufacturer: Leiden Cryogenics, the Netherlands. Intended Use: The instrument will be used, in conjunction with the instrument imported under docket 12-065, to develop ways for preserving quantum information in a way that is immune to a wide variety of decoherence mechanisms, to program fundamental couplings at near-atomic scales, for the quantum simulation of "metasuperconductors," and to develop new mechanisms for the transfer of quantum information between long-lived localized states and delocalized states. The samples to be studied are a thin layer of $LaAlO_3$ (LAO), grown on $SrTiO_3$, which undergoes a metal to insulator transition when the LAO thickness is greater than 3 unit cells. The unique features of this instrument are the ability to cool samples to T<50 mK using cryogen-free cooling where possible, an integral cryogen-free 3 axis vector magnet (>5/1/1 T), an integral large field magnet (>18T), the ability to rotate the orientation in a large field, and scanning probe microscopy capability at base temperature (T<50mK). These features enable the sample to be cooled below the superconducting transition temperature (Tc~200mK), to be rotated in any orientation relative to the magnetic fields, allow the investigation of the large spin-orbit field present in the samples (Bso~15T), and on nanometer size scales gate, modify and probe nanowire devices and quantum dot arrays. Justification for Duty-Free Entry: There are no instruments of the same general category manufactured in the United States. Application accepted by Commissioner of Customs: December 12, 2012.

Docket Number: 12-065. Applicant: University of Pittsburgh, 4200 Fifth Avenue, Pittsburgh, PA 15260. Instrument: Motorized Two Axis Sample Rotator for Dilution Refrigerator. Manufacturer: Attocube Systems, Germany. Intended Use: The instrument will be used, in conjunction with the instrument imported under docket 12-063, to develop ways for preserving quantum information in a way that is immune to a wide variety of decoherence mechanisms, to program fundamental couplings at near-atomic scales, for the quantum simulation of "metasuperconductors," and to develop new mechanisms for the transfer of quantum information between long-lived localized states and delocalized states. The samples to be studied are a thin layer of $LaAlO_3$ (LAO), grown on $SrTiO_3$, which undergoes a metal to insulator transition when the LAO thickness is greater than 3 unit cells. The unique features of this instrument are the ability to cool samples to T<50 mK using cryogen-free cooling where possible, an integral cryogen-free 3 axis vector magnet (>5/1/1 T), an integral large field magnet (>18T), the ability to rotate the orientation in a large field, and scanning probe microscopy capability at base temperature (T<50mK). These features enable the sample to be cooled below the superconducting transition temperature (Tc~200mK), to be rotated in any orientation relative to the magnetic fields, allow the investigation of the large spin-orbit field

present in the samples (Bso~15T), and on nanometer size scales gate, modify and probe nanowire devices and quantum dot arrays. Justification for Duty-Free Entry: There are no instruments of the same general category manufactured in the United States. Application accepted by Commissioner of Customs: November 29, 2012.

Dated: December 20, 2012.

Gregory W. Campbell
Director of Subsidies Enforcement
Import Administration

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