



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: 13-017. Applicant: Ohio State University, 2041 College Road, Columbus, OH 43210. Instrument: Cryo-SEM System with Aquilo Preparation Chamber. Manufacturer: Quorum Technologies, United Kingdom. Intended Use: The instrument will be fitted to an existing dual beam focused ion beam (FIB) instrument in order to provide a new capability for 3-D imaging and analysis of polymeric materials and biomaterials at cryogenic temperatures below -109 degrees Celsius. The required performance characteristics for this instrument are a

highly stable, thermally isolated nitrogen gas-cooled stage which attaches to the SEM stage and is capable of reaching a temperature range of +100 to -190 degrees Celsius, a separately cooled cold trap with independent temperature control capable of reaching temperatures below -190 degrees Celsius, a cryo-preparation, cryo-transfer chamber that is directly attached to the SEM, but with the turbomolecular vacuum pumping and advanced gas cooling system mounted remotely, as well as a high vacuum system consisting of a remotely positioned 70L/s turbomolecular pumping system capable of achieving a vacuum of 10^{-6} mbar or better in the directly attached cryopreparation, cryo-transfer chamber. The instrument will be used for cryo-imaging that will provide new insights in the study of biocompatibility and failure of orthopaedic implants, and also the evaluation of new materials and implant surfaces for tissue engineering applications. The cryo-preparation, cryo-transfer and cryo-imaging capabilities will enable minimally invasive approaches to be used to investigate structures and interfaces in their near-native vitreous state. 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: April 3, 2013.

Docket Number: 13-019. Applicant: California State University Northridge, 18111 Nordhoff Street, Northridge, CA 91330. Instrument: Ultrahigh Vacuum Low Temperature Scanning Tunneling Microscope. Manufacturer: Unisoku Co., Ltd., Japan. Intended Use: The instrument will be used to study the electronic and spin-related phenomena (Kondo effect, spin flip, spin injection, etc.) in low dimensional materials including grapheme (one atomic layer of carbon atoms), magnetic materials (transition metals iron, cobalt, nickel and corresponding phthalocyanine molecules), and topological insulators. The techniques to be implemented include depositing magnetic atoms or molecules on grapheme and measuring scanning tunneling spectroscopy of these magnetic impurities on grapheme, growing grapheme on ferromagnetic materials (cobalt, iron) and measuring the spin-polarization of grapheme induced by the ferromagnetic materials, as well measuring the scanning tunneling spectroscopy on topological insulators. The capabilities required for these experiments that this instrument fulfills include a high magnetic field of 8 Tesla, and measurements at low temperature (<5 Kelvin). 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: May 1, 2013.

Docket Number: 13-021. Applicant: University of Massachusetts Amherst, 120 Governors Drive, Amherst, MA 01003. Instrument: Electron Microscope. Manufacturer: JEOL Ltd., Japan. Intended Use: The instrument will be used to identify structure/properties relationships of polymer based solar cells or for the structural analysis of polymer/nanoparticle hybrid materials

for the development of high-density storage devices, as well as to study the self-assembly of bio-polymer systems for drug-delivery system development. 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: April 3, 2013.

Docket Number: 13-020. Applicant: University of Texas at Austin, 2109 San Jacinto Blvd. – D3700, Austin, TX 78712-1415. Instrument: V-Gait Dual Belt Instrumented Treadmill. Manufacturer: Motek Medial, the Netherlands. Intended Use: The instrument will be used to study how both healthy humans and humans with various walking impairments (old age, stroke, etc.) maintain balance and prevent falls while they walk, and how to develop rehabilitation interventions that can help reduce risks of falling in these individuals. The experiments will include asking participants to walk on the treadmill while they are subjected to a variety of different types of perturbations and manipulations. The instrument's software will control and coordinate both the treadmill and the virtual reality environment to impose the perturbations and/or other walking conditions that are specified. Existing devices will be integrated into the instrument's virtual reality system to synchronously record information regarding how participants move and their muscle activations in response to various manipulations of their walking behavior. The primary individual components of this instrument that are required for these experiments are the split-belt perturbation treadmill, the virtual reality system, and the data recording systems, as well as the "D-Flow" system which allows each component to communicate with one another. 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: May 1, 2013.

Docket Number: 13-023. Applicant: Max Planck Florida Institute, One Max Planck Way, Jupiter, FL 33458. Instrument: Quanta 250 FEG SEM (D8421). Manufacturer: FEI Company, Czech Republic. Intended Use: The instrument will be used for the fabrication of atomic force microscope cantilevers and electron beam deposition. The cantilevers are made from silicon or silicon nitride, with the radius of the tip curvature on the order of nanometers. Electron-beam deposition is a process of decomposing gaseous molecules by electron beam leading to deposition of non-volatile fragments onto a nearby substrate. The electron beam is usually provided by a scanning electron microscope that results in high spatial accuracy (less than one nanometer), and the possibility to produce free-standing, three-dimensional structures. The cantilevers are observed by the scanning electron microscope. The chamber of the scanning electron microscope is filled with carbon gases. Then the electron from the scanning microscope focuses on the tip of cantilevers to deposit an amorphous carbon. The instrument needs to work with high beam parking precision (~1 nanometer) in the environment in which

the material deposition is produced in relatively low vacuum. 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: May 16, 2013.

Gregory W. Campbell
Director of Subsidies Enforcement
Import Administration

June 14, 2013_____

DATE

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