



BILLING CODE 3510-DS-P

DEPARTMENT OF COMMERCE

International Trade Administration

Yale University, et al.

Notice of Decision on Application

for Duty-Free Entry of Scientific Instruments

This is a decision 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). Related records can be viewed between 8:30 A.M. and 5:00 P.M. in Room 3720, U.S. Department of Commerce, 14<sup>th</sup> and Constitution Ave, NW, Washington, D.C.

Docket Number: 16-027. Applicant: Yale University, New Haven, CT 06510. Instrument: Onefive Laser System Katana-08 HP. Manufacturer: Onefive, Switzerland.

Intended Use: See notice at 82 FR 16796-97, April 6, 2017.

Comments: None received. Decision: Approved. We know of no instruments of equivalent scientific value to the

foreign instruments described below, for such purposes as this is intended to be used, that was being manufactured in the United States at the time of order. Reasons: The instrument will be used as a depletion source to saturate STED depletion profile in samples containing both endogenously expressed fluorescent proteins as well as antibody labeled organic dyes. The experiments require a high power pulsed depletion source at a wavelength of 775 nm to saturate the depletion profile in STED microscopy to achieve resolution below the diffraction limit. The picosecond pulse profile is needed to synchronize the depletion pulse with the excitation pulse. Minimal after pulse tail and sub 100 ps pulse width are also required.

Docket Number: 17-001. Applicant: Barnard College, New York, NY 10027. Instrument: Positioner for a prototype Schwarzschild Couder Telescope (pSCT). Manufacturer: DESY-DeutschesElektronen-Synchrotron, Germany. Intended Use: See notice at 82 FR 16796-97, April 6, 2017. Comments: None received. Decision: Approved. We know of no instruments of equivalent scientific value to the foreign instruments described below, for such purposes as this is

intended to be used, that was being manufactured in the United States at the time of order. Reasons: The instrument will be used to point the pSCT at astrophysical gamma-ray sources to detect and measure optical Cherenkov light flashes produced in the Earth's atmosphere by very high energy gamma ray photons. The instrument is a unique piece constructed as part of a design project called the Cherenkov Telescope Array (CTA), which is being developed by the international astronomical community. DESY is the only company who builds an instrument of this kind.

Docket Number: 17-003. Applicant: Arizona State University, Tempe, AZ 85287-1504. Instrument: Laser-lithography system for 3-dimensional microstructuring and nanostructuring. Manufacturer: Nanoscribe, Germany. Intended Use: See notice at 82 FR 23191-92, May 22, 2017. Comments: None received. Decision: Approved. We know of no instruments of equivalent scientific value to the foreign instruments described below, for such purposes as this is intended to be used, that was being manufactured in the United States at the time of order. Reasons: The instrument will be used to develop new methods of

determining the atomic structure of proteins, and to make movies of molecular machines at work. It is capable of fabricating structures as small as 0.2 microns on a side, which are not limited to a planar geometry, using nozzles whose overall size is a few millimeters, with finest detail of 0.5 microns.

Docket Number: 17-004. Applicant: Trustees of Tufts College, Medford, MA 02155-4284. Instrument: Microscopy Image Acquisition Unit. Manufacturer: Phaseview, France. Intended Use: See notice at 82 FR 23191-92, May 22, 2107. Comments: None received. Decision: Approved. We know of no instruments of equivalent scientific value to the foreign instruments described below, for such purposes as this is intended to be used, that was being manufactured in the United States at the time of order. Reasons: The instrument will be used to produce 3D images of objects in regular light microscopy, for example, biological cells, the surface of teeth, and polymers. The unique and required features include an andor camera connected to piezo driving optical objective, 3-D imaging device that uses a liquid-crystal focusing technology and so-called Ray

technology to record 3-D information in one shot, and very fast mechanical noise-free recording of 3-D images of surfaces and cells.

Docket Number: 17-005. Applicant: Boston University, Boston, MA 02215. Instrument: Positioner for a prototype Schwarzschild Couder Telescope (pSCT). Manufacturer: DESY-DeutschesElektronen-Synchrotron, Germany. Intended Use: See notice at 82 FR 23191-92, May 22, 2017. Comments: None received. Decision: Approved. We know of no instruments of equivalent scientific value to the foreign instruments described below, for such purposes as this is intended to be used, that was being manufactured in the United States at the time of order. Reasons: The instrument will be used in material science research, using a fiber laser to induce two-photon polymerization in the target material. Through sophisticated coordination of an X-Y stage and a galvo-scanner, a structure designed in a standard CAD tool can be transferred to a cube of photosensitive material in a matter of minutes. The instrument is capable of lateral feature sizes for 3D structures of less than 200 nm, and less than 150 nm for 2D structures. The instrument is able

to fabricate structures up to 300  $\mu\text{m}$  height with constant high resolution and quality independent of the structure height by means of a dip-in-laser lithography technique.

Docket Number: 17-006. Applicant: The Association of Universities for Research in Astronomy, Boulder, CO 80303.

Instrument: M1 Cell Assembly. Manufacturer: Mechanical & Optical Systems, NA, Belgium. Intended Use: See notice at 82 FR 23191-92, May 22, 2017. Comments: None received.

Decision: Approved. We know of no instruments of equivalent scientific value to the foreign instruments described below, for such purposes as this is intended to be used, that was being manufactured in the United States at the time of order. Reasons: The instrument will be used to study the highly dynamic magnetic fields and plasmas throughout the solar atmosphere. It will provide the necessary means to support, shape and cool the DKIST primary mirror, without which the primary mirror would not meet the stringent performance characteristics for conducting the experiments. The instrument will be able to accurately adjust the M1 Mirror optical surface by applying arbitrary Zernike correction terms to correct for telescope

errors in addition to polishing errors and M1 Cell Assembly induced errors. After optics correction, the total allowed M1 Mirror optical surface figure error from all sources other than polishing residuals shall be less than 45 nm RMS after subtraction of tip tilt and focus.

Docket Number: 17-007. Applicant: The Association of Universities for Research in Astronomy, Boulder, CO 80303. Instrument: Coating and Cleaning Equipment for the Daniel K. Inouye Solar Telescope. Manufacturer: Advanced Mechanical & Optical Systems, NA, Belgium. Intended Use: See notice at 82 FR 23191-92, May 22, 2017. Comments: None received. Decision: Approved. We know of no instruments of equivalent scientific value to the foreign instruments described below, for such purposes as this is intended to be used, that was being manufactured in the United States at the time of order. Reasons: The instrument will be used to study the highly dynamic magnetic fields and plasmas throughout the solar atmosphere. The M1 Wash Platform shall be capable of capturing washing effluent and directing it into a containment system, which shall include pumping capacity to

move the effluent from the containment system into AURA supplied containers, as well as protect effluent from contaminating the bottom surface of the M1 Mirror or any other surface.

Docket Number: 17-008. Applicant: UChicago Argonne, Lemont, IL 60439. Instrument: Multiphoton 3D Lithography System. Manufacturer: Nanoscribe, Germany. Intended Use: See notice at 82 FR 23191-92, May 22, 2017. Comments: None received. Decision: Approved. We know of no instruments of equivalent scientific value to the foreign instruments described below, for such purposes as this is intended to be used, that was being manufactured in the United States at the time of order. Reasons: The instrument will be used for rapid fabrication and prototyping of micro and nano sized parts by the means of novel technology, two-photon polymerization of UV-curable photoresists. The key and unique features of the instrument include the highest resolution (150 nanometers) among all commercially available 3D printers and ability to deposit a wide variety of materials template by transparent polymers. The high

printing resolution enables sub-micron feature sizes and allows a design freedom for very complex parts with internal features otherwise impossible to produce.

*Dated: July 24, 2017*

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Gregory W. Campbell  
Director, Subsidies Enforcement  
Enforcement and Compliance

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