



## **DEPARTMENT OF COMMERCE**

### **International Trade Administration**

#### **Arizona State University, et al.; 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 DATE OF PUBLICATION IN THE FEDERAL REGISTER]. Address written comments to Statutory Import Programs Staff, Room 41006, U.S. Department of Commerce, Washington, D.C. 20230. Please also e-mail a copy of those comments to [Dianne.Hanshaw@trade.gov](mailto:Dianne.Hanshaw@trade.gov).

Docket Number: 24-028. Applicant: Arizona State University, 1711 S. Rural Road, Tempe, AZ 85281. Instrument: Ultra High Pressure Multi-Anvil apparatus with DIA module.

Manufacturer: Max Voggenreiter GmbH, Germany. Intended Use: The instrument is intended to be used to enable materials to be processed under a much wider range of pressure and temperature than currently available in the United States. Materials subjected to extreme pressure (and temperature) undergo significant changes in shape, bonding and atomic-scale structure. The goal of the FORCE Mid-Scale Research Instrumentation Project is to establish a Facility for High Pressure Research located at Arizona State University (ASU), but accessible to researchers throughout the U.S., and the rest of the World, through the acquisition and implementation of highly specialized high-pressure instrumentation. Justification for Duty-Free Entry: According to the applicant, there are no instruments of the same general category manufactured in the United States. Application accepted by Commissioner of Customs: August 15, 2024.

Docket Number: 24-034. Applicant: University of Colorado JILA Department, Campus Box 440, UCB, JILA Building, Room S/175, Boulder, CO 80309. Instrument: Thulium-doped fiber laser. Manufacturer: Shanghai Precilasers Technology Co., Ltd., China. Intended Use: According to the applicant, the instrument is intended to be used with the purchase of a laser with a center wavelength of 502.88 nm and 1 watt of output power. This laser will couple certain vibrational and electronic states of the molecule YO, which is the system under study in our lab. Currently, we use a 649 nm laser (also from Precilasers) to couple a different set of levels. Integrating this laser into our experiment, we expect a significant enhancement in the number of molecules we can trap enabling new scientific goals. Justification for Duty-Free Entry: According to the applicant, there are no instruments of the same general category manufactured in the United States. Application accepted by Commissioner of Customs: October 8, 2024.

Docket Number: 24-035. Applicant: University of Colorado JILA Department, Campus Box 440 UCB, JILA Building, Room S/175, Boulder, CO 80309. Instrument: Soft X-ray scientific CMOS camera. Manufacturer: Fuzhou Tucsen Photonics, Ltd., China. Intended Use: According to the applicant, the instrument is intended to be used as a low-dose soft X-ray ptychographic imaging, for biological samples, which can benefit from an imaging sensor with high frame rates, low read out noise and high quantum efficiency. Our current generation tabletop soft X-ray source is limited to low flux, further adding to the need for a high sensitivity X-ray camera. Most of our current cameras utilize backside illuminated CCD technology, which is somewhat limited in all of those categories. Justification for Duty-Free Entry: According to the applicant, there are no instruments of the same general category manufactured in the United States. Application accepted by Commissioner of Customs: July 23, 2024.

Docket Number: 24-036. Applicant: Cornell University, Clark Hall, 142 Sciences Drive, Room 272, Ithaca, NY 14853-2501. Instrument: Narrow Linewidth Fiber Laser. Manufacturer: Shanghai Precilasers Technology Company, Ltd., China. Intended Use: The instrument is intended to be used for the trapping and controlling chains of singly ionized barium atoms. The materials to be investigated are quantum information aspects associated with the internal level

structure of the atoms and their quantum mechanical motion. Studying the efficiency of quantum algorithms using trapped ion systems and utilizing trapped ion systems as precision probes for search of new physics. Graduate students in the Katz Lab will use the lasers to assemble the trapped ion setup, gaining advanced knowledge in optics and quantum information processing. Justification for Duty-Free Entry: According to the applicant, there are no instruments of the same general category manufactured in the United States. Application accepted by Commissioner of Customs: October 22, 2024.

Docket Number: 24-037. Applicant: Tulane University, 6823 St. Charles Avenue, New Orleans, LA 70118. Instrument: Multi-collector high resolution inductively-coupled plasma mass spectrometer with collision cell. Manufacturer: Nu Instruments, United Kingdom. Intended Use: The instrument is intended to be used to enhance the research capabilities of the Earth and Environmental Sciences department. Currently planned experiments include using thallium isotopes and selenium isotopes to study past ocean oxygen variations from rock samples, strontium and calcium isotopes to investigate calcium carbonate saturation states, and boron isotopes to reconstruct past ocean acidity from corals. These analyses will provide important insights of past climate change and geochemical cycles of various elements. This instrument maybe used for demonstration purposes only for high level analytical chemistry and geochemistry classes. The goal of this course is to introduce the use of stable and radioactive isotopes as tools to trace the movement of air, water, and sediments through the atmosphere, hydrosphere, biosphere, and lithosphere. Justification for Duty-Free Entry: According to the applicant, there are no instruments of the same general category manufactured in the United States. Application accepted by Commissioner of Customs: October 22, 2024.

Docket Number: 24-038. Applicant: Harvard University, 17 Oxford Street, Cambridge, MA 01238. Instrument: Narrow linewidth lasers with accompanying accessories (2). Manufacturer: Shanghai Precilasers Technology Co., Ltd., China. Intended Use: The instrument is intended to be used for research focusing on using ultracold Strontium monohydroxide (SrOH) molecules for precision measurements of physics beyond the Standard Model, including the electron

Electric Dipole Moment (eEDM) and dark matter. To conduct these precision measurements, the SrOH molecules must first be laser-slowed and laser-cooled to extremely low temperatures and high densities. A high-power, single-frequency 688 nm laser system from Shanghai Precilasers will be used to cool the SrOH molecules inside a magneto-optical trap (MOT). This process requires precise addressing of a transition with MHz precision and a high photon scattering rate for eReactive trapping. Justification for Duty-Free Entry: According to the applicant, there are no instruments of the same general category manufactured in the United States. Application accepted by Commissioner of Customs: November 13, 2024.

Docket Number: 24-039. Applicant: University of Chicago, High Bay Research Building, 5602 S. Maryland, Chicago, IL 60637. Instrument: Telescope Mirror Test Stand. Manufacturer: Carpentaria Colombo Ferruccio SRL, Italy. Intended Use: The instrument is intended to be used to study the thermal and gravitational deformation of a 5.5 meter diameter, monolithic aluminum mirror which serves as the primary reflecting mirror on a telescope designed to study primordial gravitational waves. The objectives are to characterize the deformation of the mirror under different thermal gradients and changing elevation angles to allow development of algorithms to correct the optical images. Justification for Duty-Free Entry: According to the applicant, there are no instruments of the same general category manufactured in the United States. Application accepted by Commissioner of Customs: August 27, 2024.

Docket Number: 24-040. Applicant: University of California, Santa Barbara, 2509 Broida Hall, Santa Barbara, CA 93106-9530. Instrument: Low Noise Laser Amplifier. Manufacturer: Shanghai Precilaser Technology Co., Ltd., China. Intended Use: The low noise laser amplifier at 1064 nm will be used in a cold atom experiment at University of California, Santa Barbara, for opCcal trapping and manipulaCon of ultracold potassium-39 atoms. It will be seeded by our own 500 mW 1064 laser and will produce 100 W output power. Potassium-39 atoms at low temperature will be loaded into the opCcal traps created by the laser amplifier. Combining with acousto-opCcal modulators, we will be able to alter the quantum state of the atoms in the opCcal potenCals, and perform experiments about quantum interacCve dynamics and other

quantum simulaCons. Justification for Duty-Free Entry: According to the applicant, there are no instruments of the same general category manufactured in the United States. Application accepted by Commissioner of Customs: December 4, 2024.

Dated: January 22, 2025.

**Gregory W. Campbell,**  
*Director, Subsidies and Economic Analysis,*  
*Enforcement and Compliance.*

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