3510-DS-P

DEPARTMENT OF COMMERCE

International Trade Administration

Harvard 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). On April 11, 2025 the Department of Commerce published a notice in the *Federal Register* requesting public comment on whether instruments of equivalent scientific value, for the purposes for which the instruments identified in the docket(s) below are intended to be used, are being manufactured in the United States. *See Application(s) for Duty-Free Entry of Scientific Instruments* 90 FR 15438, April 11, 2025 (*Notice)*. We received no public comments.

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

Docket Number: 25-001. Applicant: Harvard University, 17 Oxford Street. Jefferson 158, Cambridge, MA 02138. Instrument: 1847 nm Narrow Linewidth single frequency fiber laser. Manufacturer: Shanghai Precilaser Technology Co., Ltd., China. Intended Use: The instrument is intended to be used to explore quantum physics experiments at Harvard in the research laboratory in the Department of Physics. This research work is part of the training of graduate students, undergraduate students, and postdoctoral research fellows.

Docket Number: 25-002. Applicant: University of Colorado JILA Department, Campus Box 440 UCB, JILA Building, Room S/175, Boulder, CO 80309. Instrument: Fiber Laser @1038.7 nm. Manufacturer: Shanghai Precilasers Technology Co., Ltd., China. Intended Use: The instrument will be intended to be used to lock our comb closely to the comb line corresponding to the

148.7nm thorium nuclear transition that is essential to our experiment. This will allow us to observe narrower linewidths in the experiment. The experiment is performing high-resolution spectroscopy on the nuclear clock transition in thorium-229 doped into a CaF2 crystal.

Docket Number: 25-003. Applicant: California Institute of Technology, 1200 E California Boulevard, Pasadena, CA 91125. Instrument: Narrow-Linewidth Laser. Manufacturer: Shanghai Precilasers Technology Co., Ltd., China. Intended Use: The instrument is intended to be used for cooling of ytterbium atoms on the intercombination line to reach temperatures lower than 50 micro-Kelvin using frequency doubling of the high-power narrow-linewidth 1112 nm laser source. In addition, the narrow-linewidth laser will be used for fluorescence imaging as well as state preparation of the ytterbium atoms in one of two desired spin states. For all of these applications, the narrow linewidth as well as output power is crucial in terms of meeting the experimental objectives.

Docket Number: 25-004. Applicant: University of Colorado JILA Department, Campus Box 440 UCB, JILA Building, Room S/175, Boulder, CO 80309. Instrument: High-power, narrow linewidth fiber laser. Manufacturer: Shanghai Precilasers Technology Co., Ltd, China. Intended Use: The instrument is intended to be used for two applications: (1) We want to use it as a laser source that we will double to the wavelength of 517nm, which will act as a novel transport system of ytterbium atoms between ultra high vacuum chambers. (2) We want to use the laser itself as a light source to trap ytterbium atoms—a novel alternative to our current trapping lasers in the visible range of light. To meet the needs of both, use cases, we require a narrow fiber laser combined with a high power CW fiber laser amplifier.

Docket Number: 25-005. Applicant: University of Washington, 4300 Roosevelt Way NE, Roosevelt Commons West, Seattle, WA 98105-4718. Instrument: Femtosecond lasers with ultrahigh power. Manufacturer: ULTRONPHOTONICS CO., LTD., China. Intended Use: The instrument is intended to be used to study very thin materials, just one atom thick, called two-dimensional materials. These materials behave in very special ways that are different from the

everyday bulk materials. The laser will also be used to study semiconductors to better understand how they process information and energy. The ultimate goal is to advance chip development and realize quantum computers, which can drive breakthroughs in many areas, particularly in artificial intelligence (AI), that can also improve energy conversion efficiency and make electric vehicle batteries safer.

Docket Number: 25-006. Applicant: Rice University, 6100 Main Street, MS-61, Houston, TX 77005. Instrument: Narrow linewidth laser. Manufacturer: Shanghai Precilasers Technology, Co., Ltd., China. Intended Use: The instrument is intended to be used for the 3.4um laser from Precilasers to drive an electronic transition across two metastable energy levels in the singly ionized Ytterbium ion (Yb^+). The Yb^+ ion has a rich energy level structure owing to its electronic configuration as a rare earth element. The^{171} Yb^+ ion (isotope=171) consists of two ground state energy levels ($^2S_{1/2}$ state) that are robust to perturbations and are, therefore, used to encode a bit of quantum information (qubit).

Docket Number: 25-007. Applicant: University of Colorado JILA Department, 1900 Colorado Avenue, Campus Box, 440 UCB, Boulder, CO 80309. Instrument: Integrated laser and amplification system. Manufacturer: Shanghai Precilasers Technology Co., Ltd., China. Intended Use: The instrument is intended to be used for a high-power, narrow linewidth laser to operate at 1111.6nm. The laser will be used as a seed, and fed to a doubler to get ~3W of 556nm light which we will use for the trapping and cooling of Yb atoms.

Docket Number: 25-008. Applicant: Columbia University, Department of Physics, Pupin Hall, 538 W 120 Street, New York, NY 10027. Instrument: Difference Frequency Generation Fiber Laser, 2923 nm single pass (FL-SF-2923-0.1-CW). Manufacturer: PreciLasers, China. Intended Use: The instrument is intended to be used for driving the mid-infrared optical transition in Strontium-88 atom arrays in optical tweezer experiments. This mid-infrared transition in arrays will be used to excite the 3P2-3D3 transition, enabling the study of quantum simulation on the super-subradiance. The objectives are to observe the evidence of super-subradiance in the

strontium-88 arrays, which are required to observe the lifetime longer or shorter than spontaneous decay of single strontium-88 atom (57 kHz). The mid-infrared transition will excite 2923 nm laser and observe the lifetime of excited state via a state-detection method.

Docket Number: 25-009. Applicant: Duke University, 324 Blackwell Street, Chesterfield Building, 701 W Main Street, Durham, NC 27701. Instrument: Narrow linewidth, 435nm laser. Manufacturer: Shanghai Precilasers Technology, Co., Ltd., China. Intended Use: The instrument is intended to be used to investigate quantum simulations using trapped Ytterbium ions, and the reduction of readout errors using this laser over current readout procedures and the use of this laser for the optical-metastable-ground qudit architecture. To employ the laser in achieving these objectives, it will be Pound-Drever-Hall locked to an optical cavity to stabilize its phase and then will be passed through an optical system to deliver light to the Ytterbium ions to drive Rabi flopping and/or induce AC Stark shifts.

Docket Number: 25-010. Applicant: Salk Institute for Biological Studies, 10010 N Torrey Pines Road, La Jolla, CA 92037. Instrument: Supernova-3000 miniature three-photon microscope. Manufacturer: Nanjing Transcend Vivoscoper Bio-Technology Co., Ltd., China. Intended Use: The instrument is intended to be used for Biological studies and its Biophotonics Center which aims to uncover the cellular and molecular mechanisms underlying physiology and pathology, including Alzheimer's disease, neuropathic pain, multiple sclerosis, and spinal cord injury. The goal is to develop new or improved treatments for these diseases. All studies will be conducted using animal models for human diseases, especially mice.

Dated: May 13, 2025.

Tyler O’Daniel,

Acting Director, Subsidies Enforcement,

Enforcement and Compliance.

[FR Doc. 2025-08867 Filed: 5/16/2025 8:45 am; Publication Date: 5/19/2025]