

Wood Identification & Screening Center  
Sponsor: USDA Forest Service  
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\$1,087,945

Illegal logging costs the United States forest products industry \$1 billion annually due to lost export opportunities and depressed wood prices. The U.S. Lacey Act prohibits the importation of illegally-obtained wood and requires importers to declare the species and country of origin of the traded timber; however, wood identification technologies are required to confirm the validity of declarations since one of the main ways illegal importers skirt the law is by misdeclaring the species and/or origin of the wood product.

The U.S. Forest Service (USFS) has been partnering with the U.S. Fish and Wildlife Service in using a spectroscopic method, Direct Analysis in Real Time Time of Flight Mass Spectrometry (DART TOFMS), to identify wood species. In DART TOFMS, ions are created, detected and analyzed using a mass spectrometer. The molecules in a specimen that is held in an ion stream produce characteristic protonated signals, which are directed to the spectrometer. The method requires only that the sliver of wood be placed between the DART and the TOFMS inlet for a few seconds so that molecules can be removed from the wood surface and drawn into the mass spectrometer. Advantages of DART is that it is used in open air, does not require difficult sample preparation, needs no radioactive components, and gives instant results. In 2019 USFS created a Wood Identification & Screening Center (WISC) to offer services, training, and technology development for DART TOFMS for wood species identification. Oregon State University proposes partnering with USFS to locate WISC within the College of Forestry Department of Wood Science and Engineering. The partnership would result in the expansion of WISC and its wood ID services, facilitation of partnerships with other wood science faculty and professionals to further wood identification technologies, and creation of an educational hub for wood identification technologies.