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Inprentus Awarded Two Contracts to Furnish Precision X-Ray Optics to Lawrence Berkeley National Laboratory in 2017

The two contracts are both for custom designed & precision manufactured blazed diffraction gratings to be used on existing beamlines of the Advanced Light Source at Lawrence Berkeley National Laboratory and at the Linac Coherent Light Source of SLAC National Accelerator Laboratory.

Champaign, Illinois, USA, February 21st, 2017: Inprentus has been awarded two contracts by Lawrence Berkeley National Laboratory (LBNL). One contract will provide diffraction gratings to the Advanced Materials Beamline for Energy Research (AMBER). The second contract will provide gratings for a Modular X-Ray Spectrometer (MXS), which will be portable and used at multiple US Department of Energy facilities, including the Linac Coherent Light Source of SLAC National Accelerator.

Diffraction gratings are a type of scientific equipment used to control light. Inprentus diffraction gratings are specifically designed to be used in scientific experiments done with x-rays. Because X-rays are notoriously hard to make, modern x-ray experiments are done using large particle accelerator facilities called synchrotrons. Inprentus diffraction gratings are used at synchrotrons to provide scientists with the highest available resolution and efficiency when conducting their research. Diffraction gratings are applicable in many fields of modern scientific research, including but not limited to: biology, chemistry, materials science, physics, environmental science and multiple disciplines of engineering.

Home to one of the most prolific soft x-ray research facilities in the world – the Advanced Light Source (ALS), Lawrence Berkeley National Laboratory is jointly operated by the University of California and the United States Department of Energy. Set to undergo an upgrade in the coming years, the ALS-U will be the most brilliant soft x-ray facility in the world. The enhanced capabilities of an upgraded synchrotron, like the forthcoming ALS-U, benefit greatly from the high precision diffraction gratings Inprentus will provide.

Ron van Os, CEO of Inprentus commented, "Lawrence Berkeley National Laboratory's Advanced Light Source continues to be a key customer for Inprentus. Specification requirements from ALS for advanced diffraction gratings have driven the team at Inprentus to continually improve specifications, delivery time and quality of our products."

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The Inprentus diffraction gratings will be installed at the Advanced Materials Beamline for Energy Research (AMBER), which is currently under development. When commissioned, this beamline will be dedicated to energy, catalytic and chemical science research using various spectroscopic techniques, such as photoemission spectroscopy, absorption spectroscopy, emission spectroscopy and fluorescence spectroscopy.

Inprentus diffraction gratings will also be installed as components of the Modular X-Ray Spectrometer (MXS), which was recently described by ALS Staff Scientists in a paper published in the Review of Scientific Instruments (doi: 10.1063/1.4974356). This new instrument will provide researchers with a flexible end-station spectrometer capable of working with both large-source small-pixel detector setups and small-source commercial CCD detector setups. This flexibility will allow the spectrometer to be used at ALS end-stations as well as end-stations at the LCLS free-electron laser at the SLAC National Accelerator Laboratory, which is nearby LBNL & the ALS.

One of Inprentus' earliest customers, LBNL is representative of the core of the soft x-ray synchrotron market.

The Advanced Light Source at Lawrence Berkeley National Laboratory

The Advanced Light Source is a Department of Energy-funded synchrotron facility that provides users from around the world access to the brightest beams of soft x-rays, together with hard x-rays and infrared, for scientific research and technology development in a wide range of disciplines.

Inprentus Inc.

Inprentus designs, manufactures and sells X-ray and EUV diffraction gratings for synchrotron radiation facilities that are used for a variety of scientific and commercial applications by many Fortune 500 companies, academic institutions and government laboratories around the world. Inprentus was founded in June 2012 to commercialize an innovative, nano-scale lithography technology using mechanical deformation of metallic surfaces.