Inprentus Awarded NASA SBIR Phase III Contract to Manufacture High-Precision Spherical Gratings for ESIS-II Mission

Under this contract, Inprentus will manufacture ultra-high-precision spherical diffraction gratings for a next-generation solar sounding rocket experiment.

CHAMPAIGN, IL, UNITED STATES, January 13, 2026 /EINPresswire.com/ -- Inprentus, a global leader in advanced manufacturing for precision blazed diffraction gratings, has been awarded a Small Business Innovation Research (SBIR) Phase III contract by NASA. Under this contract, Inprentus will manufacture ultra-high-precision spherical diffraction gratings for the ESIS-II (EUV Snapshot Imaging Spectrograph II) mission, a next-generation solar sounding rocket experiment.

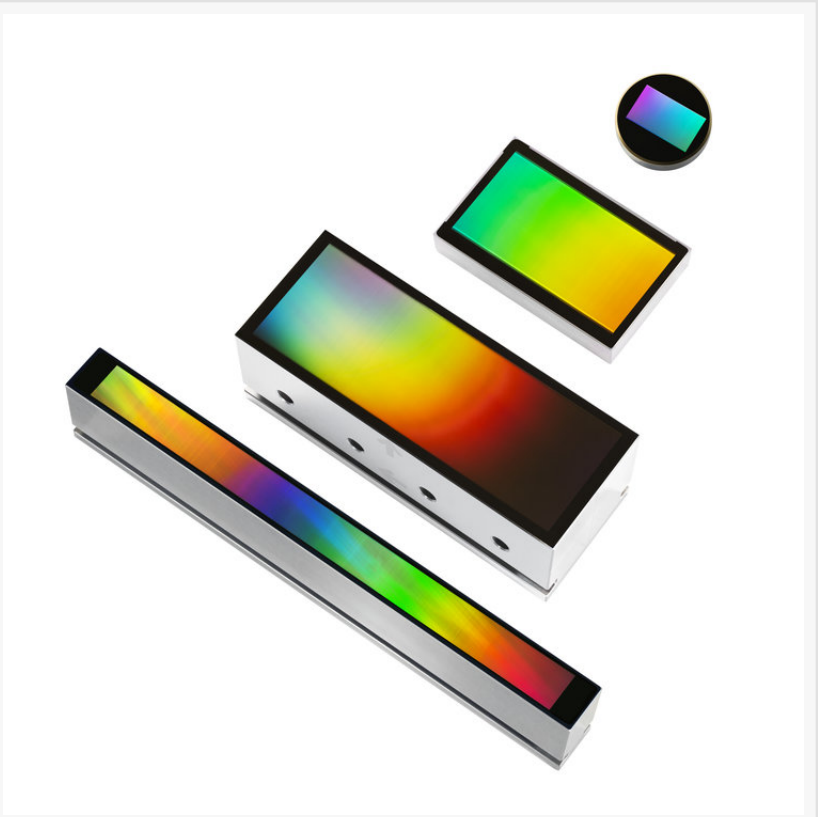
> Inprentus' unique curved grating technology is a critical breakthrough, allowing the spectrometer to be as compact as possible to meet size limitations required to fit inside a research rocket"
>
> *Cody Jensen, Inprentus Chief Technology Officer*

The ESIS-II mission aims to capture high-speed "snapshot" images of the Sun's transition region and corona. To achieve this, the instrument utilizes a slitless spectrograph design that requires ultra-precise optical components to disentangle spatial and spectral data.

Inprentus will provide six custom-engineered spherical gratings, each featuring a unique dispersion profile for the main mission and an additional six spherical gratings for the initial on-ground alignment phase. These gratings are the "engine" of the ESIS-II instrument, allowing it to capture six simultaneous projections of solar activity. The data from these projections is then reconstructed using tomographic techniques to provide a 3D view of solar eruptions and magnetic reconnection events at unprecedented temporal and spatial resolution.

"We are honored to continue our collaboration with NASA and support the ESIS-II mission's vital work in heliophysics," said Subha Kumar, Chief Operating Officer of Inprentus. "This Phase III

award underscores the maturity of our mechanical ruling technology and its ability to meet the most demanding specifications for radiation-hard, scientifically complex spaceflight optics that ensure superior efficiency and resolving power for capturing faint solar spectral lines".



Blazed Diffraction Gratings Manufactured by Inprentus

Inprentus uses premium mechanical ruling technology that allows for high precision in the shape and placement of grating grooves. This technology is uniquely suited for the curved surfaces of spherical gratings, ensuring maximum light throughput and minimal distortion for suborbital sounding rocket missions like ESIS-II. “Inprentus’ unique curved grating technology is a critical breakthrough, allowing the spectrometer to be as compact as possible to meet size limitations required to fit inside a research rocket,” says Cody Jensen, the company's Chief Technology Officer.

The ESIS-II mission data collected will help scientists understand how energy is transported through the solar atmosphere, ultimately improving our ability to predict space weather events that can impact satellite communications and power grids on Earth. The sun’s activity, especially flares and coronal mass ejections, can disrupt satellite communications and pose a radiation risk to astronauts, making solar weather forecast a critical part of space exploration and national security.

This contract marks a significant milestone in Inprentus' commercialization of technology originally developed through earlier SBIR phases. By transitioning these capabilities into a flight-ready mission like ESIS-II, Inprentus continues to strengthen its position as a primary supplier for the global aerospace and scientific research communities.

Inprentus founder Peter Abbamonte noted “For the first time, Inprentus gratings will go into space. This is a well-deserved validation of the creativity and competence of the Inprentus team as well as the unique qualities of our gratings.”

About Inprentus:

Founded in 2012 by University of Illinois Professor Peter Abbamonte, Inprentus specializes in the manufacturing of blazed diffraction gratings using a novel, nano-scale mechanical ruling technique. The company provides state-of-the-art optical solutions for synchrotrons, free-electron lasers, semiconductor metrology, and space-based imaging systems worldwide.

Inprentus aims to apply 21st century mechanical ruling to solve critical current and future grating-centered challenges. We are committed to excellence, risk, and pushing boundaries by providing state-of-the-art blazed gratings that perform to unprecedented specifications and that enable novel applications. Outcomes include next-generation monochromators, spectrometers, laser systems, and analytical instrumentation in defense applications, as well as ground-breaking consumer experiences enabled by improvements in chip manufacturing and see-through AR waveguides. Inprentus is dedicated to facilitating next-level science and technology by continually enhancing our capabilities with cutting-edge developments, collaborations, and partnerships.

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