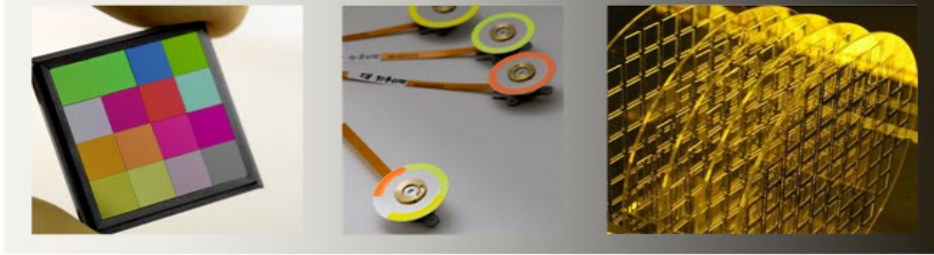




Optical Innovation News

Volume 4, Issue 2

July 2016

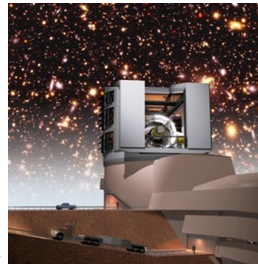


Coatings for World's Largest Astronomical Filters

Materion Precision Optics is set to begin the first phase of manufacturing the coatings for six of the world's largest precision astronomical filters to date for the new Large Synoptic Survey Telescope (LSST). The curved filters, 80 cm in diameter and weighing between 15-30 kilograms, will be installed in the telescope's (3.2 gigapixel) digital camera for a 10-year period to survey and map tens of billions of stars and galaxies.

"Only a few years ago, a large filter would have been around 10 cm in diameter. We have repeatedly scaled up to meet the astronomy community's increasing requirement for larger filters," said Tom Mooney, large optics product manager at Materion. "The LSST filters will be the largest we have built and our large optics facility in Westford, MA is suited for the task since it was designed with such filters in mind."

The coating design and process development phase of the large astronomical filters will be conducted in Materion's Large Optics Facility Class 1000 clean-room, which is capable of coating optics up to 1.4 meters in diameter.



[Read More ...](#)

Optical Interference Filters

Co-depositing materials to produce a material with a prescribed refractive index offers a powerful technique providing thin film designers an additional optimization parameter. This ability eliminates the use of the Herpin equivalent layers with a characteristic thick/thin composition that is difficult to control optically.

For narrow band filters, this design variable allows one to make all quarter wave designs with arbitrary bandwidths. It permits the intrinsic error correction in direct optical monitoring of turning points to obtain high performance and yield. In very demanding short pass filters, it allows the suppression of higher order reflection bands.

Beyond multilayers, the ability to make a continuously varying index supports making filters with a sinusoidal variation that exhibit no harmonic structure at all. These filters are known as Rugates and they incorporate a single frequency sine wave and can be combined in a Fourier series to obtain the desired spectral performance.

[Read More ...](#)

Earth Imaging & Materion

The world of earth imaging is rapidly changing and Materion's enabling products and technology are at the forefront of this change. For decades earth imaging was the domain of larger government-based platforms (Landsat, VIIRS, Sentinel, etc.). Over the last few years with the commercialization of LEO (lower earth orbit), there has been an explosion of private satellite companies now capable of providing high resolution imaging. Materion's expertise in providing multispectral filters and arrays for government projects has proven invaluable in supporting these industrial enterprises.

Materion's **ArrayTec™** product line is a perfect match for the fast-paced, higher volume needs driving the commercialization of earth imagery. Whether it's our Standard, Select or Custom models all are fully space-qualified and backed by 35+ years of successful space missions. We've taken our unmatched heritage, capabilities and experience in this area and tuned it towards the requirements of today's marketplace.

[Read More ...](#)

MATERION PRECISION OPTICS

2 Lyberty Way
Westford, MA 01886
Phone: 978.692.7513
www.materion.com

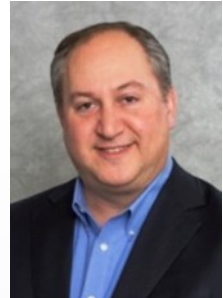


MATERION

In This Issue
[Astronomical Filters](#)
[Interference Filters](#)
[Earth Imaging](#)
[Matthew Mazzuchi](#)

Meet Materion

Welcome our new Vice President of Sales, Matthew Mazzuchi, who started at Materion Precision Optics in March. Matt is responsible for leading the Global Sales team and its two



main operations in Westford, MA and in Shanghai, China. These facilities manufacture products for somewhat different markets, so Matt's key focus is ensuring the right commercial teams are in place to properly represent our products and support our customers. Matt commented; "I am really pleased to be at Materion Precision Optics. Its customers, applications, equipment, products, and processes are all very familiar to me - so it feels like home."

Matt works in Westford and reports to President Michael Newell. While his office may be in Massachusetts, he noted that "the world is really my office, as Materion has customers all over North America, Europe, and Asia." [Read more about Matt...](#)

Events - Join us!



September 20-23, 2016
Maui, Hawaii