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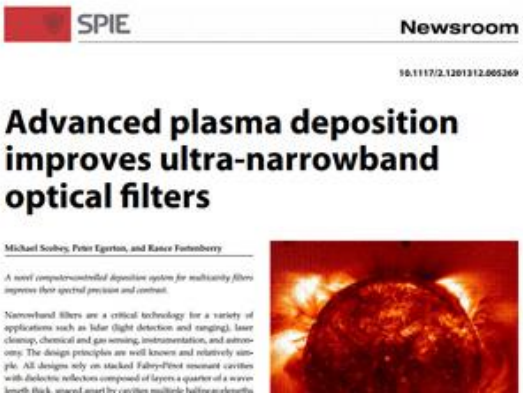
Why Alluxa?

Alluxa is an ISO 9001:2015 certified, ITAR registered manufacturer of high-performance optical filters and thin-film coatings. Since 2007, Alluxa has rapidly grown from a small startup to a world leader in precision thin films. Alluxa's engineering team has been instrumental in achieving this growth by refining our advanced SIRRUS™ Plasma Deposition process, designing and building our coating equipment, and dedicating a large amount of resources to research and development. Meanwhile, our leadership team has been reinvesting in the business and creating a progressive company culture that benefits both our customers and our people.

ULTRA Series
Alluxa ULTRA Series optical filters and thin-film coatings are designed with your application and system requirements in mind. They are all rigorously tested to ensure the highest possible performance and quality for each filter type, and all are designed and specified to exceed the performance of any comparable optical filters on the market.


SPIE Newsroom

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Advanced plasma deposition improves ultra-narrowband optical filters

Michael Scobey, Peter Egerton, and Rance Fortenberry

A novel computer-controlled deposition system for multicavity filters improves their spectral precision and contrast.

Narrowband filters are a critical technology for a variety of applications such as lidar (light detection and ranging), laser cleanup, chemical and gas sensing, instrumentation, and astronomy. The design principles are well known and relatively simple. All designs rely on stacked Fabry-Pérot resonant cavities with dielectric reflectors composed of layers a quarter of a wave

ULTRA Narrow
Alluxa is the world leader in ultra-narrowband filters. Our ultra-narrow bandpass filters remain unchallenged in terms of achieving greater than 90% transmission along with sub-nanometer bandwidths, wide-range out-of-band blocking, and steep edges.

Custom Coatings
Alluxa's engineering team will work with you to design custom optical filters and thin-film coatings for your OEM system. Even if your requirements are inherently challenging, we will push the boundaries of our current design techniques and coating processes in order to meet the demands of your system. If we are unable to meet your requirements on the first coating run, we will perform additional coating runs at no extra cost until we have achieved our best possible effort to meet the specifications.

Technical Support
Each request for a quote is answered by a highly knowledgeable member of our engineering team who will work with you to determine the most appropriate optical filter specifications based on your system requirements. Your technical contact will be involved in every step of the manufacturing process and will follow through to make sure the optical filter meets or exceeds your expectations.

Design Expertise
Producing an optical filter or thin-film coating that optimizes the performance of your system is the top priority of our design engineers. Our designers meticulously ensure that all requirements are met over the specified AOI range and cone angle of the beam, while taking into account manufacturing tolerance and operating temperature. They are well versed in a large variety of coating materials and design techniques, including several innovative techniques that were pioneered by our team. The designer will choose the most appropriate materials and design techniques for each optical filter in order to achieve optimal performance.

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Precision Coating Process

Our SIRRUS Plasma Deposition process allows us to achieve precision wavelength control and uniform coatings, even for large format parts. Our mechanical and electrical engineers have designed and built all of our coating equipment, and our physicists and software engineers have created a sophisticated thin-film coating process that is capable of making automated adjustments to layer thicknesses and uniformity in real time.

Our innovative process also allows us to produce thin-film coatings in a fraction of the time compared to standard coating methods, which translates to lower cost for our customers.

Advanced Metrology

Once coated, the performance of Alluxa optical filters is tested using state-of-the-art instruments. Optical filter transmission and blocking in the UV, VIS, and NIR are measured using one of the most advanced spectrophotometers on the market, and our IR filters are measured using an FTIR spectrometer.

Our highest performance filters are evaluated using the innovative HELIX Spectral Analysis System that was developed by our engineering team. The HELIX system is capable of tracing filter edges to OD7, measuring blocking beyond OD8, and resolving exceptionally steep edges.

In addition, surface figure and flatness specifications are tested using a Zygo interferometer and mechanical dimensions are measured to the nearest micron using a Keyence micrometer.

Reliability & Repeatability

Because all of our coating chambers are running the SIRRUS Plasma Deposition process, we are able to reliably and repeatedly produce the same high-performance optical filters over multiple coating runs and in multiple chambers, which translates to consistent performance across all of your systems.

Research and Development

In addition to the multitude of ongoing R&D projects spearheaded by our engineers, we are always eager to create new technologies that both fulfill unique customer needs and expand our current abilities. Some recent customer driven R&D projects have allowed us to expand our coating capabilities into the mid-wave and far IR, and others have allowed us to achieve high transmission in the UV, highly uniform coatings for large format parts, and novel coating processes with a variety of materials and substrates.

Company Expansion

With our most recent company expansion, customers will see a dramatic increase in our production capacity and a decrease in lead times. As part of the plan, the number of deposition chambers in our 40,000 ft2 facility will increase from 12 to 24 and we will have the ability to fabricate substrates in-house.

Progressive Company Culture

Alluxa offers an excellent working environment that ultimately benefits both our team and our customers. In addition to providing top-tier benefits, all of our full-time employees are part of a generous profit sharing program that results in substantial quarterly bonuses. Bonuses are driven by customer-driven goals such as on-time delivery and achieving a breakthrough in a challenging R&D project.

As a result of our progressive company culture, Alluxa is able to boast a high employee retention rate and has been able to recruit many talented people. As part of our recruitment program, we offer summer internships to undergraduate science and engineering students who work closely with experienced engineers. New team members are given projects that are designed to develop their problem solving abilities and allow them to take pride in their work.