Developments | Products | Innovations ISSUE 09/2021

Editorial

Welcome to the fifth SCHOTT Advanced Optics NEWSFLASH!

First, we hope you and your families continue to stay healthy. Second, we hope you had a nice summer and were able to enjoy some time off with your families.

What will you find in today's newsletter?

We are excited to announce multiple product innovations here at SCHOTT! Innovations include new optical glass types for our standard portfolio, SCHOTT RealView® 1.9 lightweight for Augmented Reality, new portfolio of optical wafers and additions to the ceramic converters portfolio.

Our seminar series, Academy of Optics, also returns from a short summer break! Our first session will kick off on Tuesday, Sept 28.

Are you attending SPIE Optifab next month in Rochester, NY? Learn more about what you'll find at our booth and the technical talks we have planned.

Finally, don't miss our newest edition to the newsletter - #FoodForThought. In this issue, we share a recent achievement by the National Ignition Facility at Lawrence Livermore National Laboratory. It just so happens that SCHOTT is part of this groundbreaking revolution!

Enjoy reading the latest news and information from SCHOTT Advanced Optics.

Ralf Daferner
VP Sales, SCHOTT Advanced Optics

In this issue:

New Optical Glass Types Now Available

This month, we introduced new glass types to the market including N-LASF55, N-LAK28 and SF3 as well as radiation resistant glasses.

Radiation resistant glasses become available off the shelf - enabling sustainable optical designs for space, nuclear environments, medical and security applications.

N-LASF55 (refractive index of 1.95) and N-LAK28 (refractive index of 1.74 with very high thermal stability) stand out due to their higher hardness and lower density compared to glasses with similar optical properties. SF3 enables a higher transmission at UV wavelength. N-LAK28 and SF3 are perfectly aligned for color correction designs.

Due to their material properties, these glass types are enabling small and robust optical designs for portable devices, automotive and aviation application and withstand the toughest environmental conditions.

Download our data sheet collection for more information.

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SCHOTT Drops Weight of AR Glass by 20%

SCHOTT unveils its next pioneering innovation in Augmented Reality, **SCHOTT RealView® 1.9 lightweight.**

The new optical glass shaves five grams off the weight of the waveguides currently used in AR devices. This results in a lighter, more comfortable, more immersive experience for the user.

The weight cut is mainly due to a reduced density of the material. The result - AR devices that offer the highest wearing comfort while not compromising in image quality.

SCHOTT RealView® 1.9 lightweight is not an existing optical glass retrofit for AR use. Its formulation and processing were developed from scratch, specifically for the AR application.

Download our product flyer for additional information.

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New White Static Ceramic Converters

SCHOTT now offers three new **white static converter materials** with a correlated color temperature of 5000 K. These materials offer different white color coordinates and irradiance limits to suit a wide range of applications such as digital projection, machine vision & metrology, life science, stage and searchlights.

Our static solutions offer superior luminance, high irradiance and brightness. They allow to increase light output for your light sources with no moving parts, close the green gap, are easy to integrate with lighting devices or optical fibers and provide low maintenance as well as total cost of ownership.

Download our product flyer for more information about the newest addition to our portfolio.

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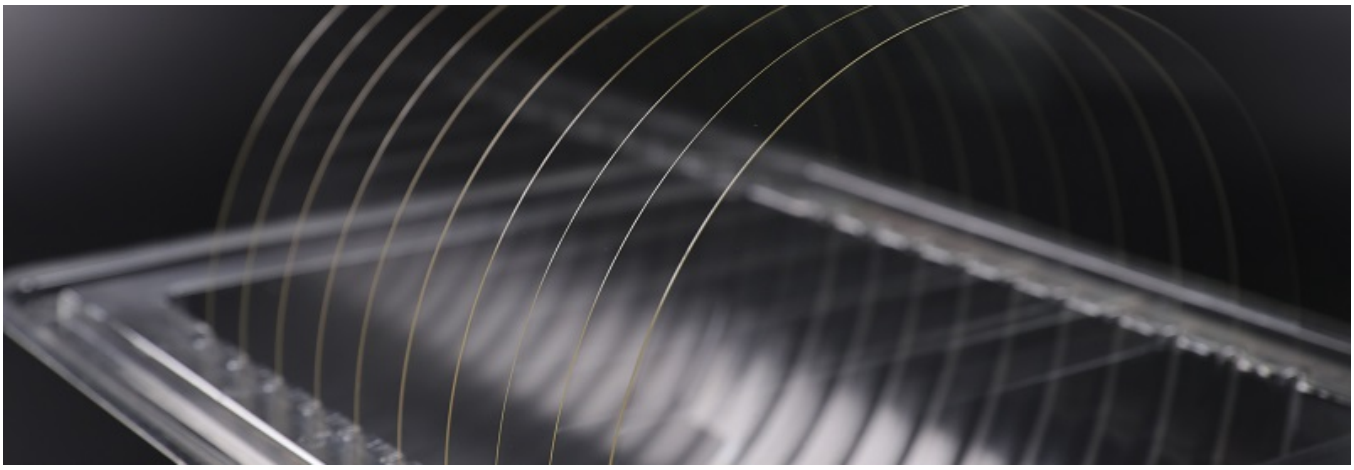
New Optical Wafers Portfolio from SCHOTT



Applications in the strong growing field of miniaturized optics such as wafer-level optics, micro-optics, diffractive optical elements, meta-lenses or micro-lens-arrays require flat optical substrates with extremely precise geometrical features.

For example, wafers with specific properties enable optical and mechanical functionalities through a high refractive index or a low total-thickness-variation (TTV).

A solid robustness in typical wafer processing conditions is key to a stable and high-yield production. In order to fulfill these ambitious requirements, deep material and technological expertise is needed to supply the right substrates for the right application in a reliable quality.

As the technology leader, SCHOTT Advanced Optics is determined to address these needs and realize innovative products in this industry by releasing our new optical wafers portfolio.

We built this portfolio on experience from our market-leading position in Augmented Reality, by leveraging our outstanding wafer manufacturing capabilities. This allows us to offer ultra-flat, polished wafers that we manufacture in a reliable mass production process according to SEMI standards. A well-controlled total-thickness-variation below 1 µm even for 300 mm diameter wafers has become a daily routine for us.

The optical wafers portfolio comprises a wide range of material families with unique properties: optical glasses, technical glasses, fused silica, filter glasses, glass-ceramics and sapphire. This extensive set of material options allows you to select the ideal wafers for your application.

Our strong and experienced global application and production set-up will assist you all the way from your first ideas on product design, up to consumer scale ramp up for series production.

Yverdon, Switzerland - our center of excellence for coating, is eager to partner with you to design and produce a wide range of coatings that enhance your application and exceed your customer's expectation.

Contact Dr. Henning Kaufmann, Product Manager, Optical Wafers to discuss our optical wafers portfolio for your next project.

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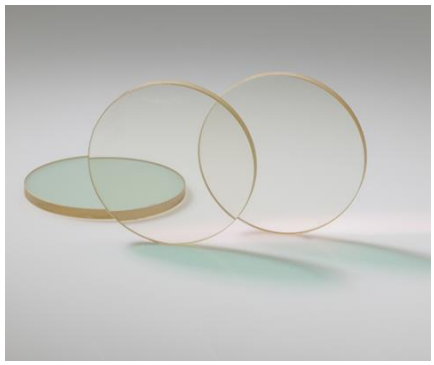
ZnS - Multiband Scratch Resistant AR Coating

Scratch resistance is a real issue when it comes to protecting optical devices from harsh environments. In order to match today's requirements with respect to scratch resistance and spectral performance in the IR range, a real advantage is necessary.

Through our knowledge of high end polishing processes and a unique coating technology, we were able to generate solutions for special applications.

This coating is designed to give low reflectance, low absorption, high transmittance in the visible 0.45 µm to 0.80 µm and IR 8-12 µm and outstanding scratch resistant performance.

Download our product flyer for additional information.



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How to Select Color Filter Glass for Life Science Applications

Color glass filters offer advantages over coated filters in certain life science applications. However, selecting the best option requires careful consideration of several factors.

Optical filters are critical for selectively passing and blocking specific wavelengths. Color glass filters and coated dielectric filters are both utilized in life science systems.

Understanding the advantages and disadvantages of each filter type ensures that system designers can achieve the required performance for their application.

When using color glass filters, several key considerations regarding chemical and mechanical properties should also be kept in mind to select the proper solution.

Read the full article, co-authored by Dr. Ralf Biertümpfel, Product Manager for Optical Filters at SCHOTT and Edmund Optics, online in the August issue of Photonics Spectra.

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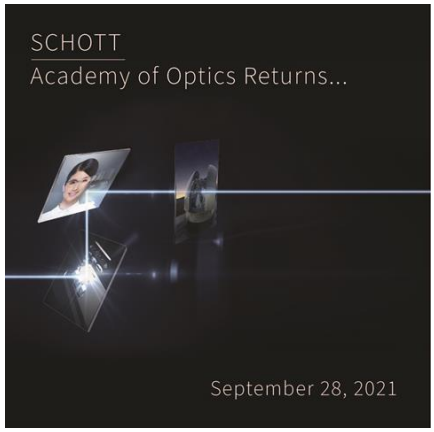
SCHOTT Academy of Optics Returns!

After a short summer break, the Academy of Optics returns next week with all new sessions!

Join us **Tuesday, September 28** for the first session. We will host this session twice to accomodate multiple time zones. The first session will take place at 9:00AM CEST and the second session will take place at 10:00AM EDT / 4:00PM CEST.

We're excited to share some exciting updates with you around optical glasses, Augmented Reality and ceramic converters.

Visit our website for more information and to register for this session. See you there!



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Attending SPIE Optifab? Visit Our Booth

SPIE.OPTIFAB

Registration is now open for SPIE Optifab 2021 taking place in-person at Rochester, NY.

The technical program runs October 18-21 and the exhibition runs October 19-21.

Visit our team of experts at **booth #1107** to learn about our new glass types for multiple applications, our ZERODUR® material, IR material, laser glass and optical filters.

We will also present three technical talks on the following topics:

- ZERODUR® precision processing with optimized front figure tolerances
- The history of optical glass and future improvements
- Chalcogenide Glass Advancements

Complete your registration for Optifab today. We can't wait to see you there!

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#FoodForThought: Get Ready for the Nuclear Fusion Revolution

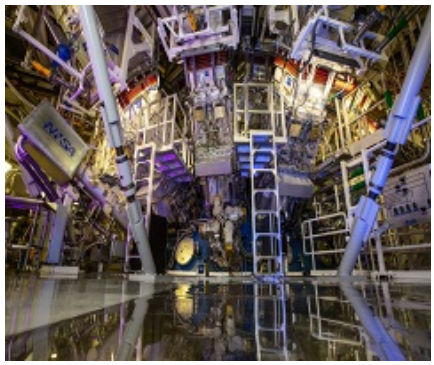
It sounds implausible: a technology that could replicate the chemistry of stars, unleash nearly unlimited clean energy and safely power the world for centuries.

Sustainable nuclear fusion took a step closer to reality last month when scientists at the National Ignition Facility, part of the Lawrence Livermore National Laboratory, announced that they had produced about 10 quadrillion watts of fusion power after blasting a hydrogen capsule with laser beams.

The burst only lasted a fraction of a second, but offered significant evidence that harnessing fusion energy could one day be feasible.

SCHOTT manufactures and supplies the laser glass and other optical materials used in this experiment. We're excited to be part of this groundbreaking revolution!

Read the full article to learn more about the NIF's recent achievement.



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Advanced Optics, **SCHOTT AG**, Hattenbergstrasse 10, 55122 Mainz, Germany
Phone: +49 (0)6131/66-1812, Fax: +49 (0)3641/2888-9047, info.optics@schott.com, www.schott.com