SCHOTT joins US for its nationwide festivities around glass

Following recent celebrations in Washington DC for the National Day of Glass, GTI caught up with SCHOTT Vice President of R&D and New Ventures Bill James to get his take on the significance of the event.

GLASS-TECHNOLOGY INTERNATIONAL:

Bill, this was a historic day for the glass community in the US. How was it for you at SCHOTT to be part of the action?

Bill James: It was absolutely amazing! I'm passionate about this material. Growing up, I spent too much time looking through it instead of looking at it and trying to understand it. And being in a community of glass lovers who're truly passionate about what this material can do -the material of glass, that is- was really quite extraordinary. The talks ranged from the most minute piece of glass that could go in and change the world to something large that people can observe from an architectural perspective. All truly great to hear.

GTI: One interesting part of SCHOTT's National Day of Glass presentation is that the company was involved with the moon landing in 1969. Can you explain SCHOTT's role in the Apollo 11 mission?

*BJ:*Absolutely! And here's a personal story to start. I am a Purdue University grad - and Purdue's the home of Neil Armstrong. So, as we looked at this and made connections to what SCHOTT's role was in this it really became quite personal. Living at Purdue, I was residing on Neil Armstrong Drive. So, when Neil Armstrong stepped onto the moon for the first time and uttered his famous line, what you saw back here on earth was all made possible by optics from SCHOTT glass. So those optical materials were what really brought those images from the moon all the way back here to earth. And that's something which SCHOTT has. It manufactures optical materials. They can really be 'out of this world' if you will - no pun intended … or maybe pun intended!

GTI: Is SCHOTT still involved in enabling missions that help explore our universe in space, and improve lives on earth?

BJ: Absolutely! Our materials -whether it's optical glass or even our ZERODUR® near zero glass ceramic, which has a zero thermal expansion- are well-advantaged for missions in space. They can withstand the harsh environments. They can be designed to burn up upon re-entry - and all the other performance metrics you'll see for spaceborne missions. Whether it's communication or space flight or even oxygen sensing or creation on other extraterrestrial bodies.

GTI: Fusion energy has been in the news a lot recently. How does glass play a role here and why is it important for the future?

*BJ:*This is a big one for SCHOTT's Duryea site where I work. My Research & Development team, as well as the advanced optics team, has built a heritage of laser glass development and production for large laser systems like the National Ignition Facility (NIF) out at Lawrence Livermore National Laboratory. This is the research institute for looking at fusion energy. They focus a number of laser beams on a small pellet to force isotopes of hydrogen together and create a burn that'll release immense amounts of energy. This energy is thought to be sustainable in the future - potentially sourcing the next generation of power plants. And why's this so important? Precisely because this is energy that could be carbon-free and really stop the burn of all the nasty things currently

going into the environment. Here at SCHOTT we're very conscious of our environmental footprint and we have a very big initiative -both corporatewide and globally- to reduce our carbon emissions so as to be zero carbon by 2030.

GTI: SCHOTT's facility in Duryea, Pennsylvania leads the way in developing advanced laser glass to meet the challenge of fusion energy. Can you tell us about some of the research being done there?
BJ: Certainly. This all started with a colleague of mine: our research fellow Joe Hayden who was the first to really discover and invent platinum-particle-free phosphate laser glass. This is important because when you reach the high temperatures that you need to melt glass, some of that precious metal crucible ends up in the glass. It dissolves. A natural process that happens. Now being able to overcome this was critical because those platinum metal particles that would end up in the glass would absorb some of that light and render that glass useless. So, whether it's National Ignition Facility or laser range finders or a whole host of other laser glasses, Dr Hayden was able to overcome those challenges to really bring this to realisation in the world. Colleagues such as Tedi-Marie Usher-Ditzian are carrying that torch forward and developing new glass hosts -so, think silicates, think aluminates and other types of materials- to really push the boundaries of what we know from laser glass and enable things like the next fusion energy research - and, ultimately, fusion energy power plants.

GTI: SCHOTT made news last year for expanding its diagnostics business through the acquisition of Applied Microarrays Inc. in the US. How does this now position SCHOTT in the diagnostics market?
BJ: Diagnostics are very important. We've learnt this from the Covid pandemic - and many other things as the world's population ages and we learn more about science. Here diagnostics and our diagnostics business brings point-of-care solutions and diagnostics to people. So the faster you can learn what somebody is inflicted with -or infected by- the quicker you can treat them and the better the outcome can be. Our approach to this is very small innard glass pieces that are laser-structured - perhaps to create these lab-on-a-chip or micro-fluidic type devices that can solve these problems or identify these diseases or afflictions or indications much quicker. For us in the US this is a big deal. It's an expansion of our footprint and it brings that diagnostics footprint and that manufacturing footprint here, which is what our customers are asking us for. They really want something close to them in their region in the US. And we expect to expand even further into this market with this footprint here. Besides, we're really excited to have the folks from AMI join the SCHOTT family. They're really smart. They're really creative and we're going to see great things come out of that team.

SCHOTT GLASS TECHNOLOGIES

SCHOTT
glass made of ideas

400 York Ave
Duryea - PA 18642 - USA
Tel.: +1-570-457-7485
E-mail: info@schott.com
www.schott.com