Scienstry’s Smart Glass Faces Huge Emerging Markets

Testing of Smart Glass for Automotive and Architectural Applications

RICHARDSON, TEXAS, UNITED STATES, March 26, 2024 /EINPresswire.com/ -- Technology is the primary productive force. Looking at all high-tech fields, no leading company has succeeded by imitating. Originality is the core competitiveness. This is true for the field of liquid crystal (LC) smart glass, too.

Scienstry won 2024 Technology Innovations Leadership Award

For over three decades, LC smart glass is limited to indoor use only. With several game-changing breakthroughs for outdoor and projection applications made by Scienstry, the products and application areas have undergone tremendous changes in the smart glass industry. An obvious change is that more large-scale applications and large companies are involved in the field, because application areas have extended from windows of conference rooms to smart windows for buildings and automobile.

> Scienstry's Innovations display your future. Look at smart glass in a whole new way.”
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> *Dr. Jenson Wang*

We are happy to share some of our publications. Scienstry’s 3G Switchable FilmTM was reported as one of the world’s leading smart materials in November 2023, and Scienstry won the 2024 Technology Innovation Leadership Award from Frost & Sullivan, a 60-year-old famous think tank in marketing research. Many technologies and companies reported and recommended by the think tank in the past have now become large markets and large companies. The emerging market for outdoor applications of smart glass is rapidly growing with key contributions from Scienstry. We

wish all related industries to jointly develop the emerging market, such as smart glass for automobile, architectural, and projection applications.

In the past three decades, we have overcome many difficulties in the field. Basically, any newer manufacturers of smart films will experience all of common problems sooner or later. In order to facilitate everyone's testing and selection, we published the updated article "Testing of Smart Glass for Automotive and Architectural Applications".

Testing of Smart Glass for Automotive and Architectural Applications

Although LC smart film and smart glass made by glass lamination of the smart film have been on the market for over three decades, they could not be used for any outdoor application, because the liquid crystal (LC) is inherently unstable to ultraviolet (UV) rays. Scienstry made a major breakthrough in the stabilities of the liquid crystal and 3G Switchable Film, smart glass and a range of new glass products. Since Scienstry has successfully used 3G Switchable Film/Glass on many world-class projects for outdoor uses, the outdoor applications of smart glass have formed a strong trend.

With the launch of Scienstry's newer 3G Switchable Film/Glass products with more stable materials and novel window structures, the demand for emerging outdoor applications is stronger. The world produces about ninety million cars of hundreds of

3G Smart Glass (opacity mode) has been used on Rolls-Royce cars

3G Smart Glass (transparent mode) has been used on Rolls-Royce cars


In Manila Mall/Casino complex in Philippines, roof and wall are covered with tens-thousand square meters of 3G Smart Glass (clear mode) for energy saving in daytime

brands every year, and suitable areas for using smart glass in buildings are even greater. Scienstry used over ten years, many world-class projects, and actual lifetime of our products to prove the feasibility of outdoor applications of the smart glass. Many innovations of improving visual effects for projected images can virtually turn any window or a building into a giant display, and link the glass industry and the display industry together. The emerging market of outdoor application is much greater than the traditional market of indoor use. More and more companies have joined the ranks of understanding, testing, and producing new generation of the smart glass.

In Manila Mall/Casino complex in Philippines, roof and wall are covered with tens-thousand square meters of 3G Smart Glass (projection mode) for projected advertising in evening

When screening smart films, some companies always encounter such difficulties: fully evaluating a smart film or a smart glass requires a lot of time to test. We would like to share our experience, that is, to test the key features first, because if any key feature fails, the smart film or smart glass can't be selected. The key features mean that in order to be used in the automotive and architectural fields, some functions and capabilities are necessary, and no tolerance to change. As you go with your evaluation program against the specifications of the automotive industry and architectural industry, you will soon find out that our patented technologies support our 3G Switchable Film/glass to meet the specifications. In principle, new features determine new applications which determine new markets. The new features are only created by innovations. The key features include low voltage driving, UV stability, having both the best transparency and the best opacity, and high quality of images in all viewing angles. It is very challenging to achieve these functions not only for smart film and smart glass, but also for any kind of LCD products.

For examples, to low the driving voltage to meet automotive requirement of using a safe voltage, we created a molecular "cage" technology or "cage" theory that may produce identical sizes of microdroplets of liquid crystal. In the chemical history, such result has never been obtained in a chemical process, because sizes of any droplet or bubble are depended growth time and environment. This result not only provides a low voltage driving, but also creates a unique spherical scattering that provides same high quality of projected images in any viewing angle. On the other hand, in order to increase UV stabilities for outdoor applications of the smart film and smart glass, we created a new kind of liquid crystal component, called liquid crystal-like UV stabilizer which has the liquid crystal's molecular shape, polarity, and colorless. So, the original performance and functions of the liquid crystals are not changed after adding this type of UV

stabilizer. The liquid crystal UV stabilizers like a lot of molecular umbrellas to shield the normal liquid crystals. By applying such UV stability technologies, the stability of 3G Switchable FilmTM is increased about 50 times. Of course, the emerging market not only requires high-quality main products, but also high-quality various products. We have achieved hundreds of such great innovative results covering materials, process, equipment, new devices, and new applications in smart glass industry.

We believe that these fantastic ideas will make you feel that our R&D process is full of interesting stories. These fascinating stories describe how we solved most of long-standing problems in the industry and thus introduced new standards of high-performance features in the smart glass industry, including best optical properties, low driving voltage, highest stability for moisture, heat, and UV, all-weather applications from -30°C to 80°C or wider range applications from indoor to outdoor, both front and rear projections, super diffusion, great energy saving capability and long lifetime. If you can test most smart films available in the market, you will be surprised to find that no other smart films can meet one of our specifications. Please visit our website www.scienstry.us or contact us for details, including articles “Testing of Smart Glass for Automotive and Architectural Applications”, “Look at Smart Glass in a Whole New Way”, “Scienstry's Dark Films”, and “Being Green and Informative with 3G Switchable Film”.

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