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## **CHASM Introduces Industry's First Universal Transparent Heater Foils for All Advanced Driver Assistance Systems (ADAS) Sensors**

2023-05-12

CHASM, a leading worldwide producer of carbon nanotube (CNT) and CNT hybrid materials, has announced the launch of the world's first transparent heaters for Advanced Driver Assistance Systems (ADAS) sensors. These heaters integrate single-wall carbon nanotubes (CNT) and metal micromesh, which provide exceptional optoelectronic performance, surpassing all other CNT or alternative technology products. CHASM will showcase their latest products at Booth #33 during the AutoSens Detroit 2023 conference and exhibition from May 9-11.

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CHASM's AgeNT heaters are compatible with camera, lidar, and radar sensors, delivering rapid and uniform heating over the entire camera lens, lidome, or radome surfaces. The heaters are also highly transparent, with no visible wires, and are highly stable during temperature, humidity, and UV aging tests. Moreover, they are compatible with standard automotive voltage (12V), making them easy to integrate into existing vehicle systems. In comparison, other emerging technologies struggle to provide enough power density at 12V. AgeNT heaters can be mass-produced at low cost, making them an attractive solution for automotive manufacturers and suppliers.

The ADAS system relies on crucial components such as camera, lidar, and radar sensors. However, inclement weather conditions such as snow, fog, and ice can hinder the operation of these sensors, affecting the driver's trust in autonomous driving. To address this issue,

transparent heaters have emerged as a critical solution.

Traditional heating technologies using embedded metal wires have limitations. These visible wires can obstruct views, cause resolution loss, and generate uneven heating, hotspots, thermal gradients, and high local temperatures. This makes them inadequate for high-resolution camera sensors, long-range lidar, and high-resolution radar. As sensor technologies continue to evolve, the market is urgently looking for transparent heater technologies to ensure that drivers fully benefit from these advancements in all-weather environments.

In contrast, CHASM AgeNT transparent heaters provide superior optoelectronic performance, including higher than 90% total light transmittance through the heater foil stack for visible light, 905nm and 1550nm wavelengths, and less than 0.1dB radar attention at 77GHz. They offer faster and more even heating, with minimal negative effects on sensor visibility, and meet stringent environmental stability testing including 1,000 hrs @ 85°C/ 85% RH accelerated life test.

One trend in ADAS sensor technology is to integrate multiple sensors of different types into a single compact module, which can be placed at a single location on the vehicle. This approach is known as sensor fusion on the package (SFP) or multi-functional sensor integration (MFSI). A universal ADAS heater with minimal negative impact on sensors operating at different wavelengths is critical for SFP/MFSI because it allows for tighter integration of the sensor suite without sacrificing performance or reliability. By ensuring that the transparent heater does not interfere with the sensors, manufacturers can create more compact and efficient modules that improve the accuracy and safety of ADAS systems during inclement weather conditions.

CHASM AgeNT transparent heaters provide an ideal solution to meet this challenge, offering superior performance and ease of integration.

CHASM offers flexible heater circuits, pre-coated transparent conductive films for heaters, and patented V2V CNT-based ink, which provides supply chain flexibility to meet the

requirements of tier suppliers and OEMs. The company has successfully introduced the technology to leading Tier 1 suppliers, auto OEMs, and major sensor producers. Many commercial programs are set for production soon. CHASM is seeking to collaborate with Tier 1 and OEM partners on integrating transparent heater foils onto ADAS lens assemblies and completing qualification testing at the system level.

AgeNT transparent heaters have the potential to transform the automotive industry by providing a cost-effective and high-performance solution for ADAS sensor heating. CHASM's technology can help automotive manufacturers and suppliers enhance the reliability and safety of their vehicles, improving the driving experience.

Read the [original article](#) on PRWeb.