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Nidec Instruments Develops Hydrophilic Coat for Automotive Lenses

Nidec Instruments Corporation ("Nidec Instruments"), a wholly owned subsidiary of Nidec Corporation, announced today that it has developed hydrophilic coat that improves car drivers' vision in rainy weather and other environments where automotive cameras' lenses get wet.

Automotive Lens with Hydrophilic Coating

Camera, uncoated, without water droplet

Camera, with water repellent coating, with water droplet (in a windless condition)

Camera, with hydrophilic coating, with water droplet (in a windless condition)

The unique features of Nidec Instruments' latest coat include:
- Newly developed hydrophilic coating on the surface of lens unit's outermost lens;
- High-resistance hydrophilia with a contact angle of 45° or less*1; and
- Hydrophilia that recovers in a fair, outdoor environment (illumination intensity: 1mW/cm² (365nm))*2.

Widely used to enhance cars' safety performance, camera units, amid a growing demand for safety, are evolving to be able to take in the surrounding area's images from the surround view monitor for autonomous driving. The surrounding view camera units on a car's front and rear sections and on its both sides catch the wind while the car is running. Among other devices, the camera units installed on a car's front, back, and sides employ a large amount of coat that repels water strongly when the cameras are hit by the wind, enabling to provide clear images. On the other hand, the camera installed on the back of a vehicle, is less likely to face the wind, causing raindrop to stay long on the camera's surface, and generating concerns for fuzzy images and other types of erroneous detection.

With Nidec Instruments' latest hydrophilic coat, raindrop on a lens is less likely to become stilliform, and spreads over the lens' surface instead. This is why the coat can **mitigate raindrop's effects on projected images** from the rear camera, which is insulated from the effects of wind. In addition, **this hydrophilic coat boasts a very high**

durability, as the product's performance recovers with the help of ultraviolet light even when the hydrophilia decreases due to smear, etc. While enriching Nidec Instruments' product lineup, this newly developed hydrophilic coat will enable our customers to choose water-repellent or hydrophilic coat freely based on their diverse usage.

Furthermore, this technology, which is expected to go beyond automotive lens to contribute to many other applications such as drone and wearable camera, will help develop applied technology.

Nidec Instruments stays committed to developing products by using its technology to create light, thin, short, small, high-efficiency, and highly controllable products, to propose, at an overwhelming speed, revolutionary solutions that contribute to the evolution of cars and the world's technology.

*1. Contact angle where hydrophilia can secure sufficient visibility when rain falls on an automatic lens.
*2. The recovery performance is subject to weather and other environmental conditions.

For more details on the above product, please contact Sales Department 2 of Nidec Instruments Corporation's Sales Division (Tel.: +81-3-6862-0111). Thank you.

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