AutoCRC
Smarter Safer Cleaner

Press Release

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New One Piece Car Mirror Without Glass

Australia's AutoCRC (Cooperative Research Centre for Advanced Automotive Technology) has announced a cooperative venture to produce the world's first plastic one- piece glass-free automotive mirror.

With project partners Visiocorp Australia (formerly Schefenacker) and the University of South Australia the AutoCRC project aims to produce a low cost automotive mirror that is lightweight, provides a heated surface and no longer requires glass.

The plastic one piece mirror will replace the traditional components of glass, backing plates and screen printed resistive heater pads on automotive exterior rear-view mirrors.

Visiocorp Australia's sister company in France (Visiocorp France) has already developed a prototype utilising technologies that include injection compression moulding, vacuum metallisation and traditional liquid silicon hardcoats.

The Visiocorp prototype has already overcome the obstacle of moulding strain free, curved mirrors.

The University of South Australia (UniSA) has extensive experience in vacuum coating technology including plasma polymerisation and sputter coating and has developed patents in a number of thin film coating technologies.

The AutoCRC project brings together this expertise to develop a second generation manufacturing process that will replace traditional liquid hardcoating with a Plasma Enhanced Chemical Vapour Deposition Process (PE-CVD). It will replace expensive glass and a sputter coated resistive heating system will be applied to the mirror to replace screen printed heater pads.

These are currently imported and assembled to the glass separately. This will create a new lightweight product which meets the demand by OEMs for lower cost, lighter weight more fuel efficient environmentally friendly vehicles.

The development of the all-in-one mirror incorporating backing plates, mirror, heating plate and hard coat in a single device which in turn will reduce weight allowing even lighter weight structural materials.

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Major tasks facing the project include:

- a prototype injection compression moulding tool
- a first surface plastic reflector which meets automotive specifications for glass optics.
- proving the durability of the PE-CVD hardcoat against automotive specifications such as scratch, UV resistance and general environmental durability.
- a sputter coated heater solution that meets automotive specification, ie defrost and de-ice times
- value-add coatings that can be included in the in-line vacuum process, including Colour tints (ie. blue glass required for BMW, Audi etc.)

Visiocorp is the current global market leader in automotive mirrors and purchased more than 24 million pieces of curved and aspheric glass and 16.9 million heater pads in 2007.

Visiocorp Australia is based in Adelaide and is part of the Visiocorp Group which employs more than 5,000 people at 21 sites in Europe, America, Asia and Australia.

Its global leadership offers a clear path to market and quick uptake of the new one-piece car mirror once manufacturing is possible.

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Photo caption:

Visiocorp France's Aspheric plastic mirror design with front surface to be coated with the reflector and hardcoat and rear surface with clips and terminals for actuator and heater connection respectively. The rear surface will be coated with a combination of metal alloys that will serve as the heater element.