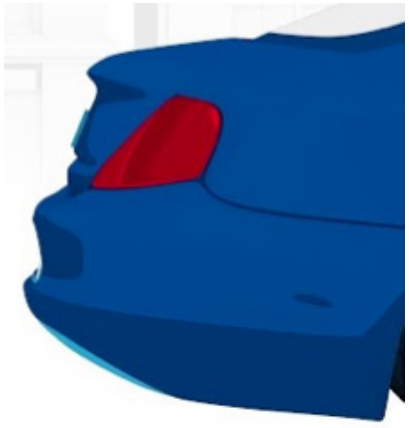
Black cars may look better in the shade, but they can be invisible to AVs, for it is still a challenge for lidar to detect dark-coloured vehicles on the road. Lidar uses radiation at wavelengths within the NIR region of the electromagnetic spectrum. These wavelengths are absorbed by many of the dark colours currently applied by automakers, and cars thusly painted degrade the mapping of the autonomous vehicle's environment.



BASF are leveraging lidar-detectable coatings made with functional pigments and technologies to help reduce NIR absorption and thereby improve lidar mapping performance on the road.

When a carbon black pigment is used in a dark color, or even in small quantities to tint a light color, the coating will absorb the NIR radiation, resulting in lower lidar reflectance. BASF's functional pigments can replace these NIR-absorptive pigments to provide deep colours while addressing the challenges brought on by the evolving nature of mobility. These functional pigments allow vehicle design teams to expand their colour portfolios for future vehicles, while still achieving the necessary level of Lidar radiation detection. For example, "Centripetal Blue is a blue-black colour with a medium-coarse sparkle that incorporates functional pigmentation", says Paul Czornij, BASF Coatings' North American Head of Design. With BASF's lidar-detectable coatings, the NIR radiation comes into contact with the dark coloured basecoat layer and instead of being absorbed, freely travels through without significant absorption. A subsequent lidar-reflective coating layer then serves as a mirror, reflecting the NIR radiation back to its point of origin.