

The Self-Cleaning Windscreen

Scientists in the US have developed a unique coating that could prevent car windscreens from misting up or accumulating filth. The coating can alter its chemical structure depending on whether it comes into contact with oil or water, making it potentially ideal for use on windscreens.

How does it work? Apparently the coating is essentially 2 surfaces in one. Drop water onto a treated surface and it will quickly spread out, creating a thin film and preventing water droplets from forming. Adding oil to the same surface responds and it will form beads – as you'd expect water to do normally – which can simply be wiped off with water.

Now for the 'science' part: the coating is made of polymer chains which chemically attach

themselves to the glass surface. The chains are flexible and, as they change shape, segments with distinct chemical properties can rise to the surface, creating different reactions depending on whether oil or water is present.

Scientists believe the coating would be useful if applied to the inside of a car windscreen as minute amounts of oil typically cling to glass and increase the likelihood of misting. Thus the coating would not only repel oily deposits but also moisture from condensation.

There are other potential applications too – used in a filter, it will allow water to pass but block oil droplets, making it useful for cleaning up oil spills. Currently the cost of producing the coating is prohibitively expensive, although a cheaper spray- or roll-on technique for production.



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