



## Anti-glare and anti-reflective displays

ICFO and Corning Incorporated develop a novel glass surface that reduces glare and reflection.

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If you've ever tried to watch a video on a tablet on a sunny day, you know you have to tilt it at just the right angle to get rid of glare or invest in a special filter. In a recent study published by the journal *ACS Applied Materials & Interfaces*, the Optoelectronics research group at ICFO, led by ICREA Prof. at ICFO Valerio Pruneri, in collaboration with Prantik Mazumder's team at Corning Incorporated (USA), have developed a novel glass surface that reduces both glare and reflection, which continue to plague even the best mobile displays today.

Significant studies have been carried out concerning anti-reflective and anti-glare technology. In the highly competitive digital age, so far there was no device capable of including an integrated anti-glare, anti-reflective display. One of the most promising developments involves layering anti-reflective nano-structures on top of an anti-glare surface. But the existing technique did not work well with glass, the material of choice for

many electronic displays, so researchers at ICFO and Corning Incorporated set out to find a new method.

To obtain the nano-structured anti-glare, anti-reflective, and even superhydrophobic surface, the researchers roughened a glass surface so it could scatter light and ward off glare but without hurting the glass's transparency. Then they etched nano-size teeth into the surface to make it anti-reflective. In addition to achieving both of these visual traits, the team showed the textured surface repelled water, mimicking a lotus leaf. Although the anti-glare roughening protects the nano-size glass teeth, further research is needed to ensure that the surface can withstand heavy touchscreen use. They add that the method is inexpensive and can easily be scaled up for industry use.