

An anti-glare, anti-reflective display for mobile devices?

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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. But now scientists are reporting in the journal *ACS Applied Materials & Interfaces* that they've developed a novel glass surface that reduces both glare and reflection, which continue to plague even the best mobile displays today.

Valerio Pruneri and colleagues note that much effort has been poured into anti-reflective and anti-glare technology. In the highly competitive digital age, any bonus feature on a device gives it an edge. But for the most part, that hasn't included an integrated anti-glare, anti-reflective display. Users still typically have to dish out extra cash for a filter or film—some of questionable effectiveness—to lay on top of their glass screens so they can use the devices in bright light. One of the most promising developments involves layering anti-reflective nano-structures on top of an anti-glare surface. But the existing technique doesn't work well with glass, the material of choice for many electronic displays, so Pruneri's team at ICFO (The Institute of Photonic Sciences) in collaboration with Prantik Mazumder's team at Corning Incorporated set out to find a new method.

On a very fine scale, they roughened a <u>glass surface</u> so it could scatter light and ward off glare but without hurting the glass's transparency. Then the researchers etched nano-size teeth into the surface to make it anti-reflective. In addition to achieving both of these visual traits, the researchers 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 say. They add that the method is inexpensive and can easily be scaled up for industry use.

Provided by American Chemical Society

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