

Glasses-free 3-D film on mobile devices wins prestigious engineering prize

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Launched earlier this year, EyeFly3D, the first glasses-free 3D accessory for smartphones, has just picked up its first award from IES. The technology is based on a simple concept of taking a regular plastic film and engineering about half a million uniform-sized mini lenses onto its surface, turning the plastic into an add-on screen protector that produces unprecedented, distortion-free, brilliant 3D content on mobile devices. Unlike some thicker glasses-free 3D filters, this award-winning technology does not affect the touchscreen sensitivity, brightness and resolution of the smartphones. At a mere 0.1mm, EyeFly3D is the first glasses-free 3D accessory that can display content in both portrait and landscape mode, doing away with the need for cumbersome 3D glasses and power-draining and costly built-in 3D screens.

For this engineering feat, scientists from A*STAR's IMRE and TP employ a combination of materials nanotechnology and integrated software, using a unique nanoimprinting process on the plastic - akin to making a waffle - to create an array of high resolution lenses. The engineered lenses are so small that they are barely visible to the human eye and do not impact the [visual quality](#) of mobile screens as seen through the plastic. Hence users can enjoy both seamless 2D and 3D effects on the same screen protector, compared to other films available in the market that may distort normal screen visuals. Coupled with the proprietary TP-developed software applications for both the Apple iOS and Android platforms, mobile device users are able to play 3D content via the film, in both landscape and portrait formats, and these applications also allow 2D pictures taken to be converted into 3D. A

[software development kit](#) is currently underway to enable [game developers](#) to convert their existing games into 3D versions.

Entrepreneurship support and vital funding from A*STAR's commercialisation arm, ETPL, were the main drivers in translating the nanoimprint research into a consumer product by driving proof-of-concept prototypes and generating market interest at major events like Singapore's TechVenture 2012 and the premier Consumer Electronics Show at Las Vegas this year.

"The award is a testament to an engineering breakthrough that has provided a local Singaporean company the opportunity to lead on the world stage. It also shows how Singapore can couple its creativity into a commercial proposition," said Nanoveu Pte Ltd Founder and CEO, Mr Alfred Chong. Nanoveu will be rolling the product out to Europe, the USA, Japan and Australia in time for Christmas this year. China and other Asian markets will quickly follow in early 2014.

"We get a lot of positive attention wherever we demonstrate EyeFly3D," added Mr Chong. "We think the biggest game changer will be our iPad model which is scheduled for release in Q1, 2014." At the moment EyeFly3D is available for the iPhone 5 and 4S models and the iPod Touch 5. The company is planning to release new models for the iPhone 5C and 5S and selected Android phones by the end of the year. Since its launch in April 2013, EyeFly3D has been sold to consumers in over 61 countries.

"Eyefly3D demonstrates how we can turn innovative research into competitive technologies and ultimately, products that benefit consumers. The versatile and industry-ready nanoimprinting technique allows us to rapidly develop research concepts and designs into functional prototypes that can easily be adapted to mass production," explained Dr Jaslyn Law, part of the award-winning team and the IMRE

scientist who developed the base technology together with TP researchers.

Temasek Polytechnic's Deputy Principal, Mrs Lay-Tan Siok Lie, said: "This project emphasises our continuous commitment to developing and bringing cutting edge technology from lab to market, in close collaboration with our key partners. We are indeed delighted to have been given this award, which endorses our effort in always pushing the boundaries of technology through research & development, while raising the capability of our staff and students in the process. Temasek Polytechnic will continue to strive to add value to the R&D landscape in Singapore through its Centres of Excellence."

Provided by Agency for Science, Technology and Research (A*STAR), Singapore

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