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# Sapphire Thin Film Technology

## ❖ INTRODUCTION

In the past few years, smart phones and tablets are getting very common in the world. Currently, most common mobile phone glass cover is strengthened glass such as Gorilla Glass, which is being used in over 2.7 billion devices. However, their hardness is only 6.5 on the Mohs scale of mineral hardness, which is still easily scratched by sand and steel. Sapphire is harder and being recognized to be the second hardest naturally occurring material, after diamond. So, in recent years, Sapphire is being considered to replace the existing cover glass material.

Sapphire window has already been featured on iPhone 5S TouchID scanner and camera lens on the rear of the phone while Vertu the luxury smartphone manufacturer, Huawei and Kyocera are also developing this related technology. But in general, high hardness materials are also fragile or brittle. Therefore Sapphire cover glass is easier to shatter when dropped.

The present invention, ArmoGlass™ is a layer of nano-sapphire film that have ultra-hard and anti-scratch properties and can be deposited onto a transparent substrate, ideal for use on touch screen devices. Its hardness is proven to be comparable to the hardness of single crystal sapphire. This nano-sapphire film that provides an ultra-hard and strong surface. Furthermore, the fabricated layer can be deposited onto various types of substrates including quartz, fused silica and silicon. The fabrication process can be completed using standard industrial processes; therefore production can be scaled-up with minimal development time. ArmoGlass™ achieves a hardness superior to tempered glass (existing mobile phone protection stickers) yet just slightly lower than sapphire.

## ❖ APPLICATION

The patented technology can provide an ultra-hard, non-fragile and scratch resistant film for the cover screen or window covers for smartphone, tablets, watches and even the solar cell panel applications.

## ❖ KEY FEATURES

- Ultra-hard, non-fragile and scratch resistant
- Cost effective in manufacturing
- Reliable and scalable manufacturing process



Introductory Video



## 44<sup>th</sup> International Exhibition of INVENTIONS OF GENEVA Awards 2016



Grand Prix Award



Gold Medal (with judge commendations) in the Industrial Processes Category



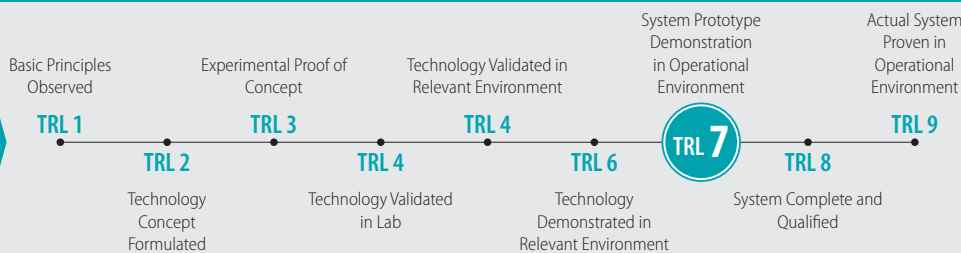
Special Award for the Invention



## ❖ ENQUIRY

✉ [stse@cathayphotonics.com](mailto:stse@cathayphotonics.com)  
 ↗ [cathayphotonics.com](http://cathayphotonics.com)

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### Contact Details

✉ [licensing-kto@hkbu.edu.hk](mailto:licensing-kto@hkbu.edu.hk) ☎ (852) 3411-8076 🌐 [www.hkburdl.com](http://www.hkburdl.com)  
 🏠 DLB 825, David C. Lam Building, 34 Renfrew Road, Shaw Campus  
 Hong Kong Baptist University, Kowloon Tong, Hong Kong

