

自潔門柄 Self-sanitising Door Handle

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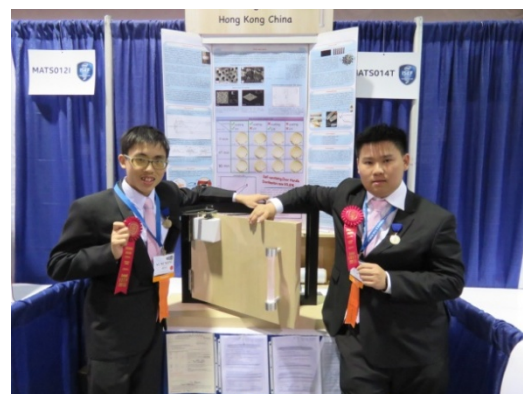
作品簡介 Project Introduction

「自潔門柄」的科學原理是，在門上安上發電機組，借拉動門柄時產生電力，為透明門柄末端兩側的發光二極管（UV LED）供電。當人們開/關門時，UV 光會透過「全內反射」的方式在門柄內傳播，為光觸媒塗層提供穩定的光源，大大提升殺菌的效果。

現時，清潔門柄所使用的漂白劑(次氯酸鈉)會對環境造成傷害，反之，「自潔門柄」可全天候進行消毒細菌，有效降低公共衛生的風險，亦較現時的產品更環保。

The scientific principle of our Self-sanitizing door handle is to install a self-charging electricity generator to the UVLED on the two ends of a transparent door handle. When the door is opened, light will be transmitted within the door handle by the Total Internal Reflection. The photocatalyst coating provides a stable light source to enhance its disinfecting effect.

Normally, door handles are protected by pre-sterilized disposable stickers or cleaned with bleach, which is a substance that causes damage to the environment. Our Self-sanitizing door handle can sanitize the handle at all times. This invention helps reduce public health risks and save labour costs.



黃深銘 Simon Wong (L) & 李鍵邦 Michael Li (R)



自潔門柄 Self-sanitising Door Handle

主要獎項 Major Awards

- 獲國際天文學聯會把編號 31905, 31907 小行星分別命名為「黃深銘星」和「李鍵邦星」(2015)
International Astronomical Union named the minor planet 31905, 31907 respectively as “Simon Wong” and “Michael Li” (2015)
- 第 44 屆日內瓦國際發明展 (2016) - 金獎
Geneva International Exhibition of Inventions (2016) - Gold Award
- 第 66 屆英特爾國際科學與工程大獎賽 (2015) - 材料科學項目二等獎
The 66th Intel International Science and Engineering Fair - Second Place Award in Materials Science
- 第 9 屆全國宋慶齡少年兒童發明獎 (2014) - 金獎
9th National Soong Ching Ling Awards for Children's Invention (2014) - Gold Medal
- 香港青少年科技創新大賽 2013-2014 - 物理及工程項目二等獎
Hong Kong Youth Science & Technology Innovation Competition 2013-2014 - Second Place Award in the category of Physics and Engineering
- 香港青少年科技創新大賽 2013-2014 - 美國耶魯大學科學與工程學會特別獎
Hong Kong Youth Science & Technology Innovation Competition 2013-2014 - Special Award from Yale Science & Engineering Association