「向創科教育全力出發」
“Driving Education Forward at Full STEAM”

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香港 STEAM 教育學會主席
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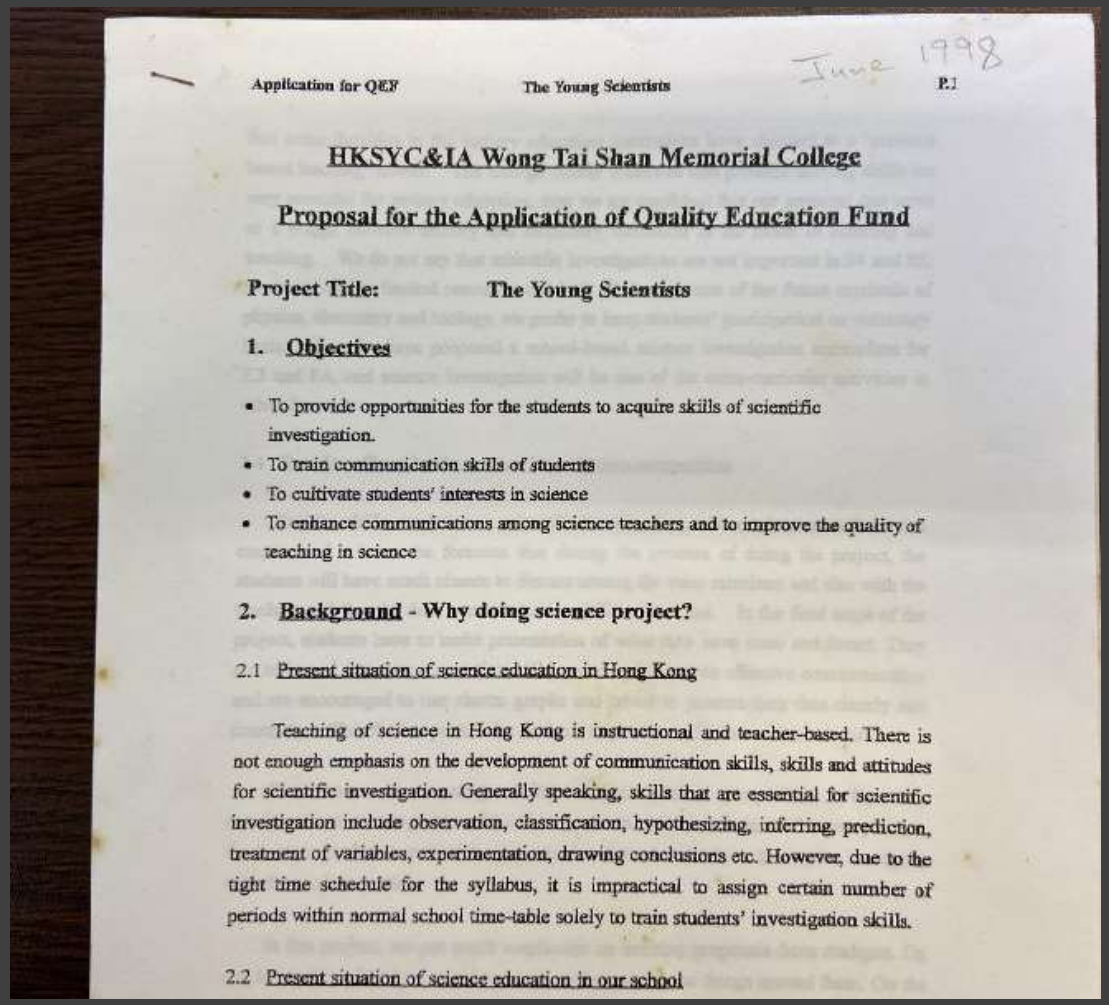
Executive Director of The Hong Kong Academy for Gifted Education,
Chairman of Hong Kong STEAM Education Association

25-03-2023



Application for QEF The Young Scientists June 1998 P.1

HKSYC&IA Wong Tai Shan Memorial College

Proposal for the Application of Quality Education Fund

Project Title: The Young Scientists

1. Objectives

- To provide opportunities for the students to acquire skills of scientific investigation.
- To train communication skills of students
- To cultivate students' interests in science
- To enhance communications among science teachers and to improve the quality of teaching in science

2. Background - Why doing science project?

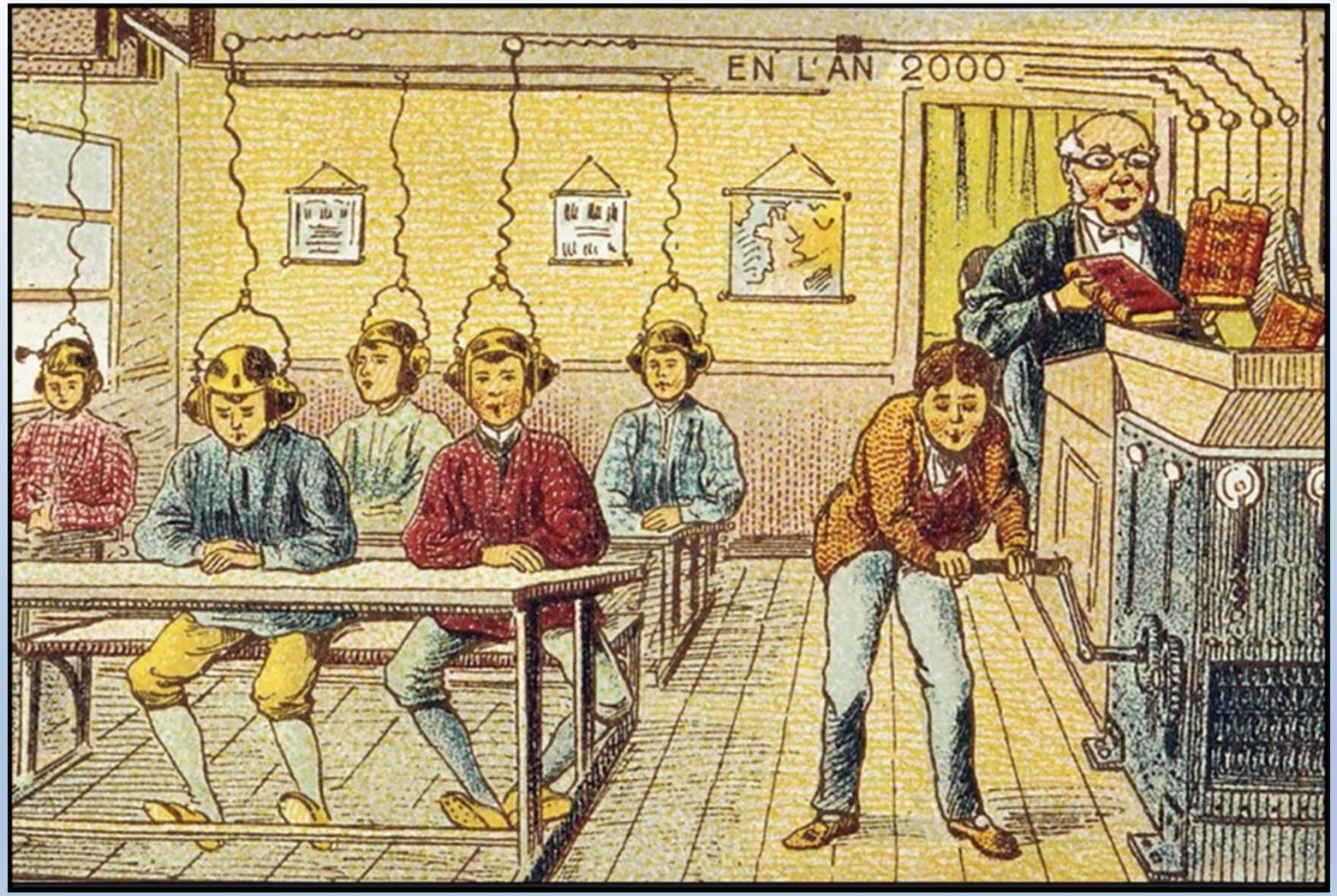
2.1 Present situation of science education in Hong Kong

Teaching of science in Hong Kong is instructional and teacher-based. There is not enough emphasis on the development of communication skills, skills and attitudes for scientific investigation. Generally speaking, skills that are essential for scientific investigation include observation, classification, hypothesizing, inferring, prediction, treatment of variables, experimentation, drawing conclusions etc. However, due to the tight time schedule for the syllabus, it is impractical to assign certain number of periods within normal school time-table solely to train students' investigation skills.

2.2 Present situation of science education in our school

My first "STEM" education project -

"The Young Scientists" : a QEF project (June 1998)



Early 1900's Poster predicting education in year 2000 – by Jean-Marc Côté

Are our children ready for the future?

October 2020

https://www.weforum.org/agenda/2020/10/top-10-work-skills-of-tomorrow

These are the top 10 job skills of tomorrow – and how long it takes to learn them

Professor Klaus Schwab says technological innovation can be leveraged to unleash human potential. Image: REUTERS/Denis Balibouse

These are the top 10 skills for 2025. Image: World Economic Forum

2025年10種必學職場技能

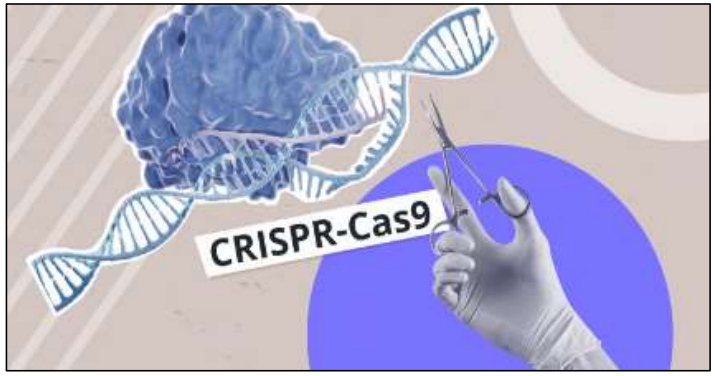
	技能
1	分析思維及創新能力
2	主動學習及學習策略
3	解決複雜問題能力
4	批判思維及分析能力
5	創意、原創及自發能力
6	領導及社會影響力
7	精曉科技操作能力
8	設計科技及編程能力
9	抗壓及靈活變通
10	推理、解難及構思能力

10 most popular professions in the future

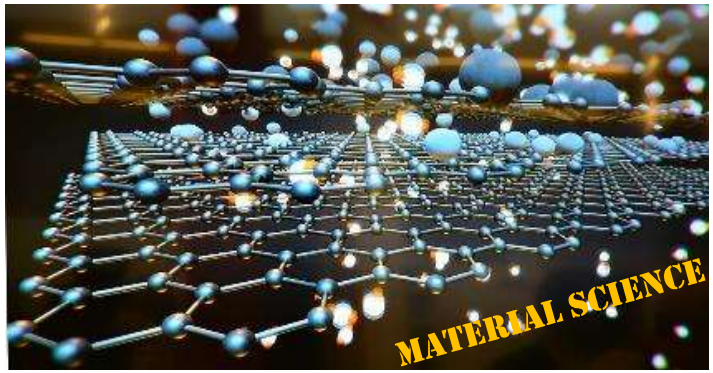
Rank 排名	Profession 職業
1	數據分析師及科學家 Data Analysts and Scientists
2	人工智能及機器學習專家 AI and Machine Learning Specialists
3	大數據專家 Big Data Specialists
4	數碼市場推廣及策略專家 Digital Marketing and Strategy Specialists
5	自動化技術專家 Process Automation Specialists
6	業務發展專家 Business Development Professionals
7	數碼專型專家 Digital Transformation Specialists
8	資訊保安分析員 Information Security Analysts
9	軟件及應用程式開發員 Software and Applications Developers
10	物聯網專家 Internet of Things Specialists

THEN AND NOW…

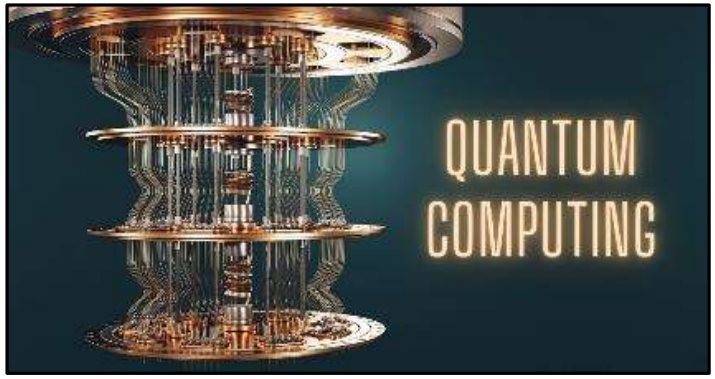
… AND BEYOND


CRISPR-Cas9

Environmental
Science


MATERIAL SCIENCE

ARTIFICIAL
INTELLIGENCE


QUANTUM
COMPUTING

STEAM 的價值觀教育

1. 創新科技需要以人為本 (Empathy)

創新科技可以有利及有害 ，
但我們需要教導學生正向思考，
利用創新科技幫助別人，
解決社會及人類的問題。

鼓勵同學利用創新科技幫助
社會最需要的人士，
包括長者及傷健人士.....

2. 科技與道德 (Ethics)

創新科技時常產生一些道德爭議性的問題。

以下的創新科技題目可以與學生一起討論是否有利或有害:

- 人工智能 (Ai)
- 無人機的應用
- 區化鏈技術
- 生物及基因科技

3. 比賽時需要誠實及遵守法規 (Integrity)

參與科研或STEAM比賽時不應只看成績或結果，過程中不可作弊或做假，需要誠實及遵守賽規。

否則成長後作為專業工程師或科學家可以製造破壞性的產品或發明！

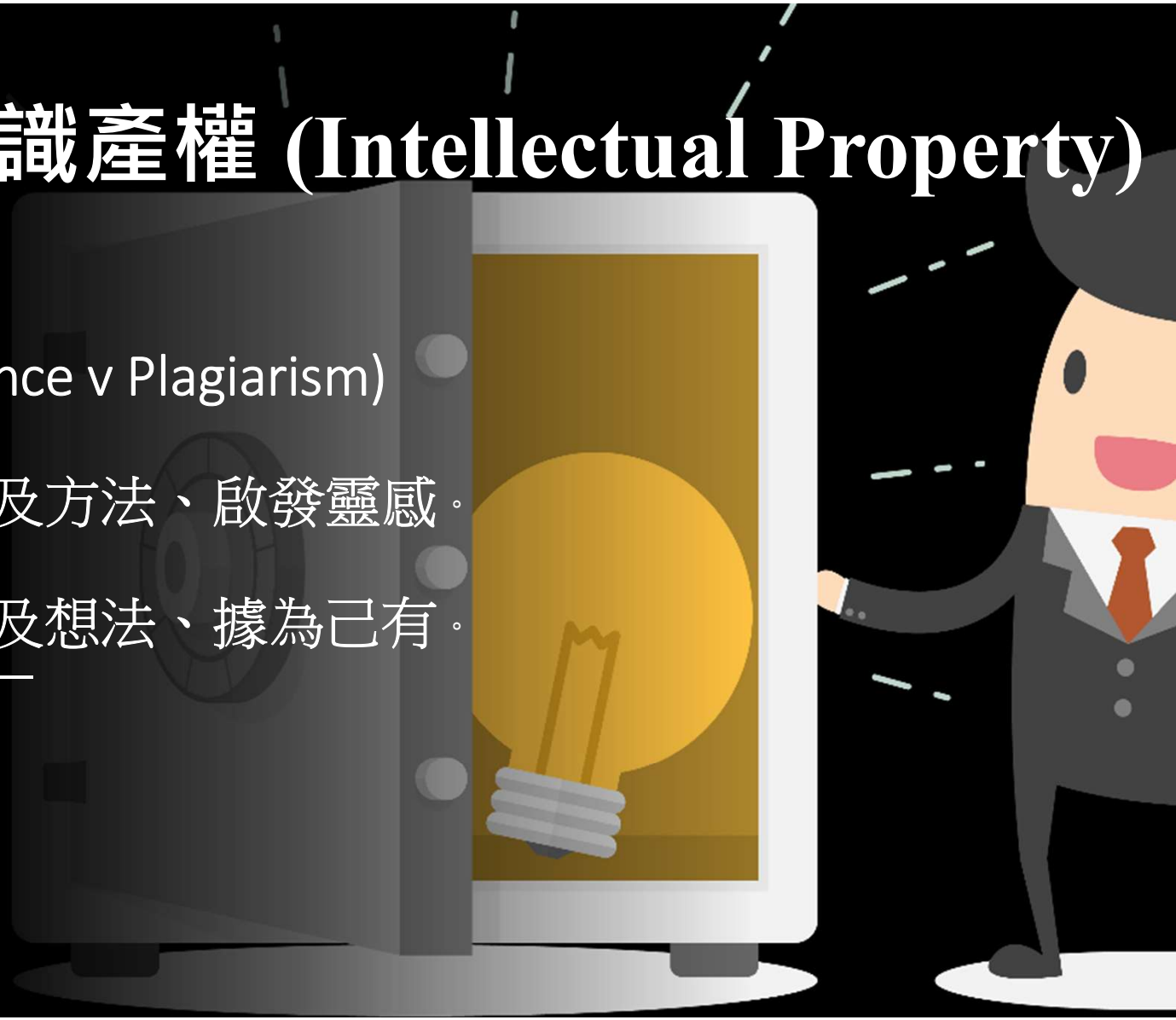
Engineer's Ring
工程師戒指

4. 學懂尊重智識產權 (Intellectual Property)

參考 v 抄襲 (Reference v Plagiarism)

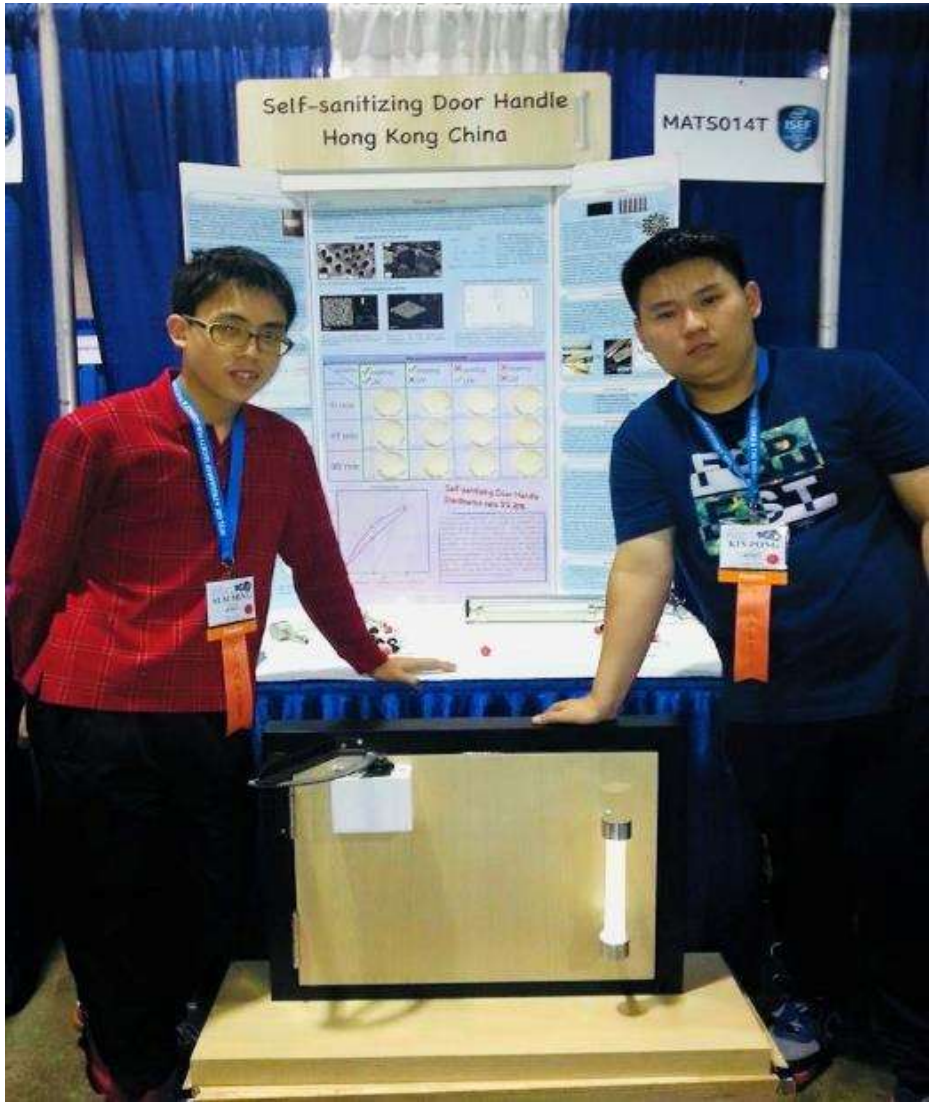
參考是學習前人的智識及方法、啟發靈感。

抄襲是偷取前人的產權及想法、據為己有。

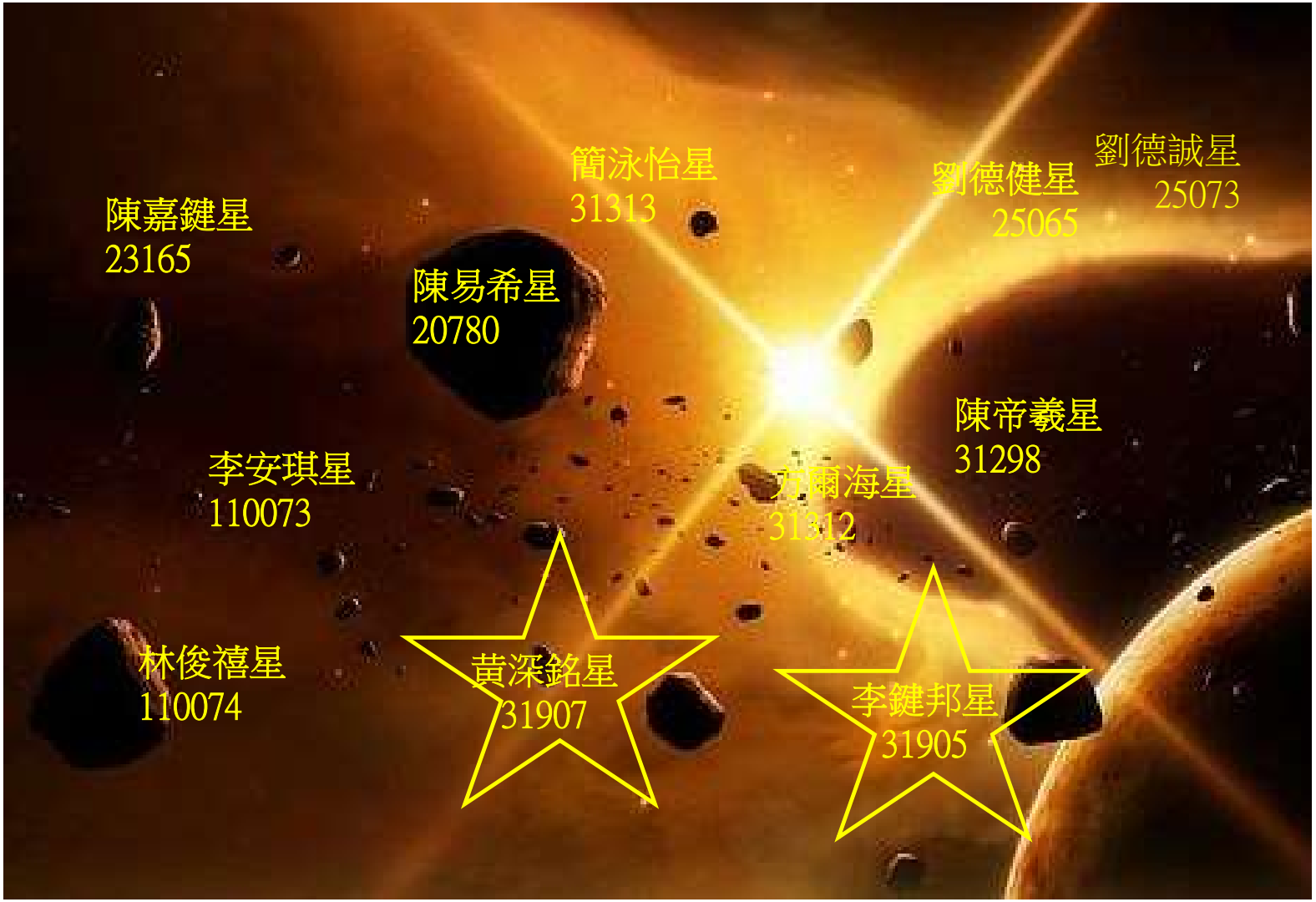


Seoul, South Korea, July 4, 2020. REUTERS

兩顆星星的誕生!!


Self-sanitizing Door Handle
Hong Kong China
MATS014T

Michael Li and Simon Wong at Intel International Science & Engineering Fair (2015)
李鍵邦、黃深銘 –「英特爾國際科學與工程大獎賽」


陳嘉鍵星
23165
簡泳怡星
31313
劉德健星
25065
劉德誠星
25073
陳易希星
20780
陳帝羲星
31298
李安琪星
110073
方爾海星
31312
林俊禧星
110074
黃深銘星
31907
李鍵邦星
31905

Geneva International Invention Exhibition (2016) - Gold Award

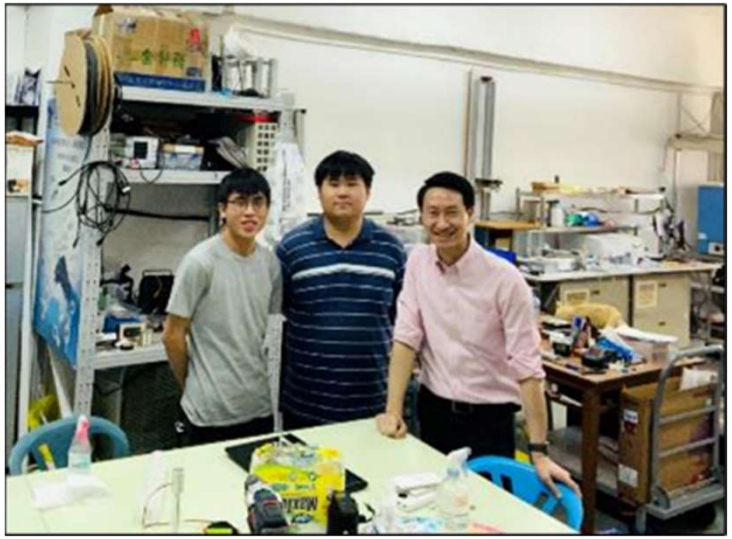
日內瓦發明展 - 金獎

Gold Award
日內瓦發明展 - 金獎

Self-sanitizing Door Handle 自潔門柄

鈦研科技有限公司
Titanology Limited

鈦研科技有限公司
Titanology Limited



自潔門柄

Nina Office Tower

Park Lane Hotel

Cyberport

Lohas Park Mall