A11-054

作品名稱　**子彈**
　　　　　Bullet

隊伍名稱　**消失的學長 upperclassman disappeared**

隊　　長　**林聖紘**　龍華科技大學電子工程學系

隊　　員　**王哲彥・符信茂・吳玉誠**　龍華科技大學電子工程學系

指導老師　**李齊雄**　龍華科技大學電子工程學系

作品摘要

本平台想要建立一個具有電腦鼠走迷宮、競速自走車、循跡線迷宮鼠三種功能合而為一的平台，用以當作各個學校的教學教具。本平台整合資訊、電子、電機、機械等知識的機電整合平台。並且包含電源電路、感測電路、馬達電路、CPU電路等四大部分，配合電池、機身、結構、車輪、輔輪、致動件等硬體以及作為邏輯判斷的程式流程軟體，整合了多方面的知識領域，因此非常適合作為機器人或單晶片嵌入式控制系統的教具。

本平台可依個人需求不同，而使用在不同功能上，藉由學習此平台可讓初階學習者更快學習上手，可依照學習者的興趣取向選擇學習方向，因在此平台上有著不同的功能取向，讓此平台更加符合學習者的需求。也因此平台價格低廉，一般學習者在學習使用上無經濟壓力負擔，平台上的三種功能也能運用於全國技藝競賽裡，讓學習者也能藉由競賽的方式讓自己學習更有成就感。
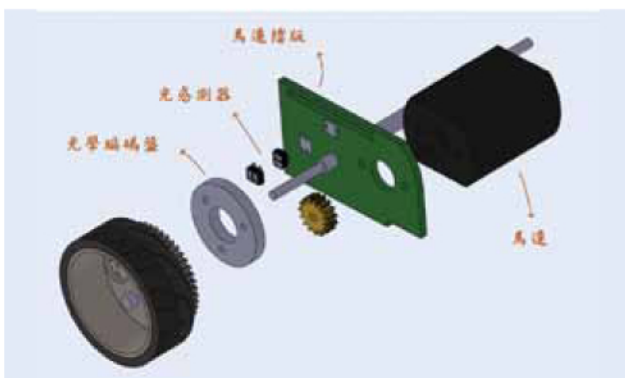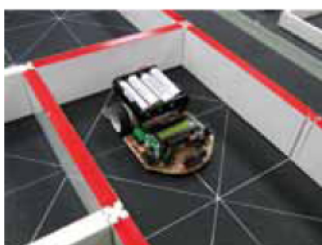
ABSTRACT

We proposed a platform which integrates the maze robot, line following robot and line maze robot. The platform contains control theory, firmware programming, electronic engineering, and the mechanic design. Students can learn many practical skills, including power circuit design, DC motor control, sensors detection and micro-controller applications, by implementing the teaching platform. Hence, this course contains much relative knowledge and is interesting to draw much attention from students.
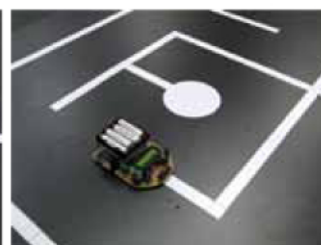
To deserve to be mentioned is that the platform can be used by most people. Junior students can learn the basic topics and develop the necessary concept of hardware circuit. Senior students can further implement the advanced firmware programming and control theory according their ability and interests. Many students are able to buy it because the platform is cheap. Furthermore, students can be interested in the relative course and learn the practice skills to increase the job competition by implementing the hardware circuit, firmware programming and joining the national contest.

自製編碼器爆炸圖

電腦鼠走迷宮

競速自走車

循跡線迷宮鼠

自製編碼器實體圖