

參賽隊伍人員及機器人簡介

Team Member and Robot Introduction

組 別：遙控組 自動組 指導老師：郭振輝 老師

學校名稱：中州科技大學

(School:) Chung Chou University of Science and Technology

隊伍名：中州電機 C 隊

(Team name:) Chung Chou Electrical C Team

壹、參賽隊伍人員：

一、指導老師



郭振輝 講師 Chen-HuiKuo Lecturer

專長領域：(Areas of expertise:)

微處理器	Microprocessor
影像處理	Image processing
圖案辨識	Pattern recognition
監控系統	Monitoring system

經歷:(Experience:)

- 中州科技大學 講師， 2011/08 ~ 迄今
- 中州技術學院 講師， 1990/08 ~ 2011/07
- 中山科學研究院助理工程師， 1983/08 ~ 1985/09

Chung Chou University of Science and Technology Lecturer, 2011/08 so far
Chou Institute of Technology lecturer in 1990/08 to 2011/07
Assistant Engineer of Chungshan Institute of Science, 1983/08 to 1985/09

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二、組員



曹偉芳 WEI-FANG CAO

擔任小組組長，材料採購、機體機構製作、機構功能測試、機器人測試、比賽中擔任操作者。

Served as team leader, material procurement, body institutions production, the agencies function tests, robot testing, the game as the operator.



莊翔皓 HSIANG-HAO CHUANG

材料採購、機器人結構製作、機構維修、機構設計、材料加工、結構基本功能測試、機體機構製作。

Material procurement, robot structure production, institutional maintenance, mechanical design, materials processing, the structure of the basic functional testing, body institutions production.



賴信宇 SIN-YU LAI

材料採購、機器人結構製作、小組討論紀錄、報告書編寫。

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Material procurement, robot structure production, group discussion records, report writing.

貳、 機器人簡介

一、構想與策略分析(A vision and strategy analysis)

1. 利用蒸氣火車運動方式的連桿原理，將直線活塞運動轉換成圓周運動。

Rod principle. Steam train movement, linear piston movement converted into circular motion.

2. 遙控組必須把握機構簡單、穩定，控制容易的比賽原則，所以這次比賽我們決定選用馬達，利用馬達帶動來達成行走及跨越的動作。

remote group must grasp simple mechanism, stability, control principle of easy games, so this game we decided to use the motor, motor driven to achieve the movement of walking and crossing.

二、機構設計(Mechanism Design)

1. 機構部分決定使用 4 足，因 4 足行走起來比較穩定，比較不容易倒!

Institutions part of the decision to use a 4 foot, 4 legged stable, are less likely to pour!

2. 使用鐵製鍊條加上鐵製齒輪，這樣會讓帶動的效率及順暢度提升許多。

With iron chains and iron gear, which would allow to drive efficiency and smoothness enhance many.

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三、行走驅動設計(Walking-driven design)

利用普利，偏心原理，將圓周運動再轉換成直線運動。

Plymouth, eccentric principle, the circular motion is converted to linear motion.

四、電路設計(Circuit design)

電力部分，選用鋰電池 24V 輸入，鋰電池重量輕、供電時間長、自我放電性低、具有可充電循環在使用之功能、壽命長、較無記憶效應等好處。

Electricity portion 24V input selection of the lithium battery, lithium battery weight light, power supply for a long time, the low self-discharge characteristics, the benefits of having a charging cycle in the use of the functionality, long life, compared with no memory effect.

五、組裝、測試與修改(Assembly, test, and modify)

1. 最初希望一邊的腳以一顆馬達做為動力加上一支墮輪。

Initially hoped the side of the foot to a motor as a power coupled with an idler.

2. 帶動效果不大理想，改成雙馬達帶動。

Driven not been very effective, into a dual-motor driven.

3. 馬達雖然廠商一樣，RPM 一樣，但運轉起來還是有極大的落差，決定改回以一顆馬達做為動力源，加上鍊條及齒輪帶動。

Motor although manufacturers like, RPM like, but there are still a huge gap up and running, decided to change it back to a motor as a power source, plus chain and gear driven.

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六、機器人創意特色說明(Robot creative Features Description)

善用軸承，軸承不但便宜且非常好用，軸承可以讓須轉動的東西減低阻力，減少噪音，提高許多的轉動順暢度。

Make good use of bearings, bearing not only cheap and very easy to use, the bearings can be turning things reduce resistance, reduce noise, improve smooth rotation.

七、參賽心得(Competition experience)

製作的過程中，雖然遇到了許多大大小小的困難，但只要用心的靜下心的 想辦法解決一個個所遇到的問題，解決後，回過頭想一想其實每個問題都是很棒且無價的經驗!製作的過程中，隱藏在其中的樂趣及所能學習到的東西，在課堂上是很難有機會遇到的。

In fact, every production process has encountered many difficulties large and small, but as long as the heart of the Jing Xiixin think of ways to solve one of the problems encountered, resolved, go back and think about it are great andpriceless experience! production process, hidden in the fun and can learn something in the classroom is very difficult to have the opportunity to encounter.