

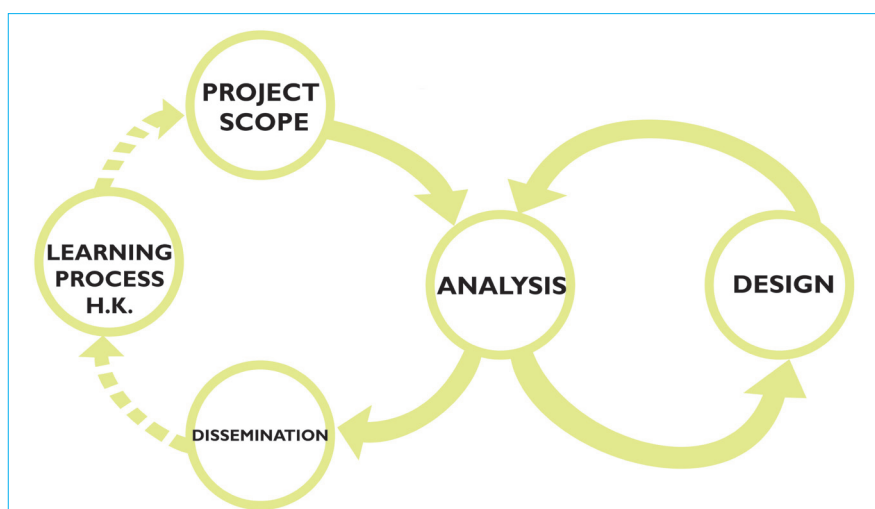
# 耗能產品生態化的綠色製造流程與設計

## Ecodesign and Green Manufacturing Model for Electrical and Electronic Products under EuP Directive

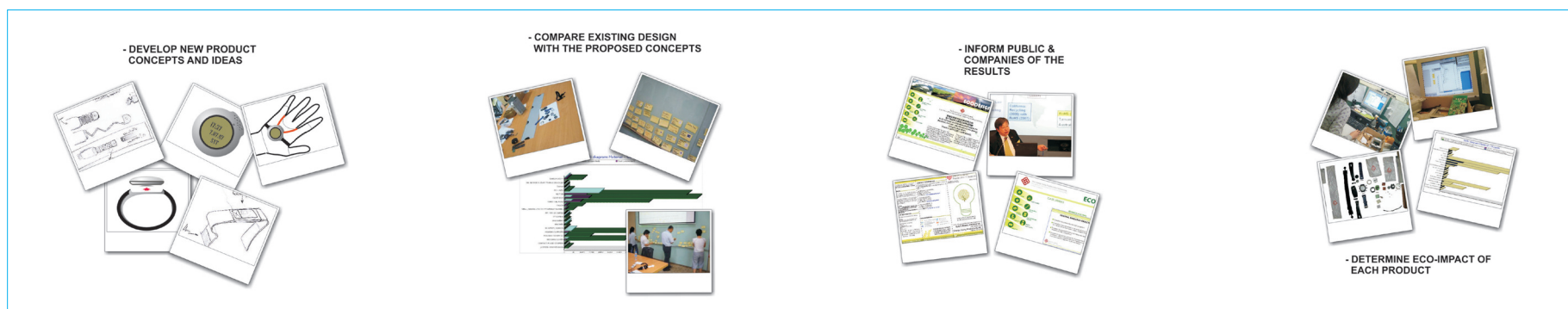
### 為減少能源消耗的產品設計理念

### An Ecodesign for Energy Using Products

透過香港特別行政區政府創新科技署的資助及八個工業代表贊助支持下，理大工業及系统工程學系聯同設計學院合作組成環保設計及綠色生產組，為項目「對應耗能產品指令2005/32/EC的電子產品的環保設計和製造規劃」作研究。此研究項目是針對選取有高度回收之物料；減少或避免選用有毒之材料；選用綠色生產或加工技術，獲得最高能源及水的使用效益，和將廢棄物減至最少。透過優化工序和資源運用，最終能使業界廠商提升其產品之成本效益。



環保產品設計概念  
Ecodesign Project Methodology



環保產品設計主元素  
Key Elements in Ecodesign Project Methodology

With the support of the Innovation and Technology Fund of the Government of HKSAR, and eight industrial sponsors, the Department of Industrial and Systems Engineering in conjunction with the School of Design of PolyU jointly launched the Ecodesign and Green Manufacturing Model for Electrical and Electronic Products. This model is focusing on selecting materials with high recyclability, eliminating or avoiding hazardous material, choosing green production processes, maximizing energy and water efficiencies, and minimizing waste. By optimizing processes and resources, manufacturers will improve their cost effectiveness as well.

#### Principal Investigator

Dr Winco Kam-chuen Yung

Department of Industrial and Systems Engineering

#### Contact Details

Institute for Entrepreneurship

Tel: (852) 3400 2929 Fax: (852) 2333 2410 Email: pdadmin@polyu.edu.hk

### 特色與優點

環保產品設計能為公司帶來的好處：

- 符合歐盟耗能產品指令
- 避免材料及能源使用過量，減少在生產過程中的廢物和污染物，以減低成本
- 更容易將產品推廣至現有及新市場，帶來商機
- 減少為應付環境問題帶來的費用
- 以雙贏策略達至長遠的經濟效益

### 應用

- 環保產品設計策略圖：  
一個平面表述圖，它展現了一些有改進可能性的選擇；通常被用作集體研討和產品拆卸工作
- 案例研究報告：  
此報告包含四個案例研究的生命週期分析、新產品概念設計、新設計的環保建議、專案資訊等
- 四項研究專題的環境特性說明資料庫：  
環境特性說明資料庫可幫助中小企業於現有產品中開發和實現新設計或新功能

### 獎項

第39屆瑞士日內瓦國際發明展 - 銀獎 (2011年4月)

### Special Features and Advantages

Benefits for companies oriented in Ecodesign activities :

- Fulfilling the EuP directive
- Reducing costs by minimizing consumption of materials and energy; by removing wastes and contaminants in production
- Sell products easily in existing and new markets
- Reduce costs by dealing with environmental problems at source
- Achieve potential long term economic success with win-win strategies

### Applications

- Ecodesign Strategy Wheel :  
A graphical representation of all possible improvement options which was used to guide brainstorming and disassembly sessions
- A case study report :  
A summary of case studies results including life cycle analysis, new product conceptual design, eco-redesign recommendations, and project dissemination information
- Four Research Case Studies with Ecodesign Profiles:  
The ecodesign profiles help local SMEs to explore the possibilities of implementing new design or design features into existing product lines

### Award

Silver Medal - 39th International Exhibition of Inventions of Geneva, Switzerland (April 2011)