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會訊

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——無線充電新路向

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——New Era of Wireless Charging

同心展關懷

caring organisation

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提升香港工業競爭力系列 ——無線充電新路向

隨著智能手機、平板電腦和其他便攜或移動等電子產品的普及，對電源需求亦同時增加。無線充電技術將會成為熱門潮流焦點，亦同時為業界帶來新的機遇。現時智能手機認同是無線充電最廣泛應用的產品，在2013美國消費電子產品展 (CES 2013)上展示了多種無線充電板，可以直接對手機等裝置進行無線充電。更有汽車廠商推出新型號的汽車系列，更內置了Qi標準的充電裝置，供同樣具有Qi標準的手機充電。可見未來無線充電模式是有一定的發展空間，隨著日後推出再一步的標準及技術發展，無線充電將會更廣泛被應用到很多家庭電器。例如攪拌器、電飯煲等等將來也可以透過無線充電技術提供電源。



在2013美國消費電子產品展 (CES 2013)上展示了多種無線充電板



無線充電

Enhance Hong Kong's Industrial Competitiveness —— New Era of Wireless Charging

With the popularity of smart phones, tablet PCs and other portable electronic products, the demand for power is also increased. Wireless charging technology will become one of the most popular trends which will bring new opportunities to the industry. For instance, wireless charging for smart phones is recognized as the most widely used products in the 2013 Consumer Electronics Show (CES 2013). A wide variety of wireless charging pad, wireless charging directly to mobile phones and other devices has been showcased in CES 2013. In particular, car manufacturers also introduced a series of new car models which has built in charging device for the Qi standard compatible smart phones. Nevertheless, with the continuous improvement in technology, the use of wireless charging will be expanded to more power hungry home appliances. For instance, Electric Stirrer and Rice Cooker are examples of home appliances that can potentially adopt the wireless charging technology in the future.

無線充電的優勢及發展

無線充電最大優點就是方便。有了相互兼容的無線充電標準，不同品牌的產品也可以經由無線充電設備充電。所以，用家無需隨身攜帶充電器和電源線，只要配備有相關及共同標準的無線充電功能的手機或電子產品，不論品牌，便可以透過有提供無線充電的地方進行充電。當然，除了手機之外仍有很多發展空間，很多家電產品、醫療器材及汽車等，也是無線充電發展的未來路向。

現時，無線充電主要有四大技術：磁耦共振 (Magnetic resonance)、電磁感應 (Electromagnetic induction)、鐳射光感應 (Laser Power Beaming)、微波轉換 (Micro-wave conversion)，四種技術各具不同優點。而要走進無線充電市場上，亦需要得到一定的認證，現時市場主要有兩大聯盟，以磁感應技術為主的無線充電聯盟 (WPC)、及以磁共振技術為主的無線充電同聯 (A4WP)，各自發展無線充電規格認證。無線充電技術標準雖然還未有一個完整及劃一的規範，但WPC已開發出Qi充電標準及其認證規格，是國際上主要的充電標準。暫時Qi是唯一有無線充電認證的標準。

要得到「Qi」無線充電認證，除了要得到一定的技術認證外，也要面對多種挑戰，包括：安全標準、電磁兼容、便攜性、充電速度等問題。成本方面也是重要一環，因為要加入行業需要繳交一定的認證費用包括入會費 1 萬5千美元及年費 1 萬5千美元。現今已有超過100間廠商支持，成員分別來自日本、歐美、台灣、韓國及中國的廠商。由於市場有相當潛力，根據國際市調機構 isuppli 預算，未來無線充電商機相當高，2013年整體產值可以高達117億美元，因此，香港已有很多廠商努力打入市場分一杯羹。





以上圖片是有關檢測Qi標準的儀器，相片由Intertek Testing Services (HK) Ltd. 提供

The advantages and development of Wireless Charging

Convenience is the biggest advantage of wireless charging, users can charge wireless mobile phones or electronic products with the wireless chargers. The interoperability of chargers under the same charging protocol allows service providers to offer wireless charging points at public locations, providing added convenience to users without carrying their own chargers. Of course, other than mobile phones, there are still many opportunities on the application of wireless charging technology to many potential products, such as medical equipment, automobiles, home appliances and toys.

Nowadays, there are four major wireless charging technologies, namely Magnetic Resonance, Electromagnetic Induction, Laser Power Beaming and Micro-wave Conversion. Each of these technologies have their advantages and disadvantages. Recently, manufacturers need to get the certification on fulfilling the requirements of some wireless charging standards in the market before entering the wireless charging market. Wireless Power Consortium (WPC) and Alliance for Wireless Power (A4WP) are the two major organizations that define protocols and standards for compliance. The WPC has developed the Qi certification scheme which is the mainstream charging standard in the market. In the mean time, WPC is the only organization that provides certification standard for wireless charging, under its proposed Qi standard.

When manufacturers prepare to apply the "Qi" wireless charging certification before starting the business, there are many other challenges on top of the technical requirements. In particular, safety standards, electromagnetic compatibility and charging speed are some of the challenges. In addition, the high membership fee, licensing fee, compliance testing fee, and development cost also impose a high entry barrier to manufacturers. The entrance fee and annual membership fee for the WPC are US\$1,500. Nevertheless, there are over 100 WPC members from Japan, Europe, the United States, Taiwan, Korea and China. Many enterprises urge to enter the market for capturing the opportunities ahead. According to iSuppli market research forecast, the overall production value of wireless charging will reach \$ 11.7 billion in year 2013. With such considerable market potential, Hong Kong manufacturers should also grasp the opportunity and get some shares of the market.



掌握無線充電的機遇協助業界發展

To facilitate the industry in Grasping the opportunities

香港生產力
促進局汽車
及電子部高
級顧問王
執中先生(左)
介紹無線充
電的發展



本會副會長
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品給演講嘉賓：
天祥公證行有
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由香港電子業商會主辦，香港生產力促進局與香港科學園協辦的一場「無線供電趨勢及應用研討會」已於2013年3月27日舉行完畢，近百名廠家參與當日的活動。我們邀請了專業設計無線充電的專家及檢測認證服務商介紹最新情況及探討業界關注的問題。其中，香港生產力促進局汽車及電子部高級顧問王執中先生當日除了介紹無線充電的發展歷史外，更介紹了現時無線充電的技術和未來發展的路向，他認為現時的技術，無論在供電傳輸及安全等各方面仍有改善空間，所以香港生產力促進局、香港科學園及香港電子業商會均會繼續一同協助業界提升無線充電技術，歡迎瀏覽本會網頁www.hkeia.org下載當日演講資料以作參考。

A Seminar on "The Latest Trend and Application of Wireless Electricity/ Wireless Charging", organized by the Hong Kong Electronic Industries Association, co-organized by the Hong Kong Productivity Council and the Hong Kong Science & Technology Parks, was held on March 27, 2013. We have invited professional and experts in wireless charging design, testing and certification to share

the latest situation and to explore the issues and concerns to the industry. During the seminar, Mr. Elvin Wong, Senior Consultant (Automotive and Electronic) of Hong Kong Productivity Council introduced the history of wireless charging development and its future development. He considered there was room for improvement in many aspects of wireless charging, such as safety and power level. The Hong Kong Productivity Council, Hong Kong Science & Technology Parks and the Hong Kong electronic Industries Association will continue to assist the industry to innovate on the use of wireless charging technology. Welcome to explore our website www.hkeia.org and download presentation materials of the seminar for reference.



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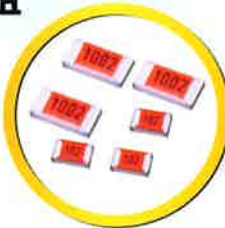
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項目簡介

國際新標準產品碳足跡ISO 14067即將來臨！
國際標準化組織(International Organization for Standardization)將推出產品碳足跡標準ISO 14067。為幫助生產電器電子產品的中小企更能適應碳足跡標準ISO 14067，提高企業競爭力，香港理工大學綠色生產及環保設計研究小組將致力於建立：

- ◉ 溫室氣體排放資料庫
- ◉ 綠色物料清單估算器(G-BOM Analyzer)
- ◉ 中小企應對指南



項目成果

1. 溫室氣體排放資料庫;
2. 針對電子電器產品碳足跡的綠色物料清單分析器(G-BOM Analyzer);
3. 以兩個最終產品及兩個關鍵性零部件為範例的研究結果;
4. 實施產品碳足跡標準ISO 14067的中小企應對指南;
5. 中小企應對指南的案例研究:下游企業和上游製造商;
6. 研討會、工作坊及展覽。



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3. 可持續發展報告
可持續發展報告納入眾多生產商的環保管理理念。



個案研究

個案研究包括最終產品及關鍵性零部件。本項目將會展示以兩個最終產品(電子磅和電磁爐)及兩個零部件(印刷電路板和液晶顯示屏)為範例的研究結果。目的是向中小企提供使用溫室氣體排放資料庫及綠色物料清單估算器的參考。



聯絡資料

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