

附件四、技術說明表



融冰式空調裝置

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簡歷：(可列出相關連結，例如系所、研究室網頁)

http://www.me.ntu.edu.tw/main.php?mod=adv_custom_page&func=show_page&site_id=0&page_id=187

市場及需求：

家用空調系統多數為不可移動式，每一空調空間皆需安裝空調設備，造成安裝冷氣裝置過多，上班時間不使用，又晚上使用時數不長，經濟效益差。市面上移動式空調技術上為壓縮製冷式，使用時需外接電力，亦需要外接風管將熱排至非空調空間，另有冷凝水排水問題。此外，移動式空調系統受限於構造，運轉效率低。

技術摘要(含成果)：

本發明涉及一種融冰式空調裝置，其係透過冰泥作為降溫之媒介，利用風道與空氣直接換熱，或是透過與熱交換器間接冷卻空氣，並以送風元件將冷風吹出。

優勢：

本發明所設計的移動式融冰空調機乃單元性供冷系統，不需使用高耗電之壓縮機進行製冷作用，因此可以使用獨立電源供電。另外，本裝置亦不需外接排熱管與排水管，具可任意移動之特色。藉由此裝置的建置，本系統更實現家用空調尖峰負載移轉功能。

競爭產品：

蒸氣壓縮式移動空調機

專利現況：

陳希立教授多年來致力於能源工程與冷凍空調等相關研究，並將其基礎研究成果與新型發展技術推廣於應用研究上。近年來，更積極與產業界技術合作，開發多項專利與技術移轉，將研究成果落實運用於產業之目標，有助於提升國內能源技術及冷凍空調產業之研發能量，並達產業與學界互惠之效益。

聯絡方式：

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Melted-Ice Air-Conditioning Device

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Experience:

http://www.me.ntu.edu.tw/main.php?mod=adv_custom_page&func=show_page&site_id=0&page_id=187

Market Needs:

The domestic air conditioning system is with poor economic efficiency due to its immobility, redundant installations in respective spaces needing air conditioning, and its slow usage in aggregate as it's off at working hours and on for a short period during night time. The portable air conditioner available on the market engages compression refrigeration, requires socket power when in use as well as attachment of air duct to dissipate heat to non-air-conditioned space, and has the issue of condensate drainage; furthermore, the portable air conditioner has a low running efficiency resulting from the limitations by its structure.

Our Technology:

The present invention relates to an melted-ice air-conditioning device engaging ice slurry as cooling medium for the direct heat exchange with air via air ducts or for the indirect air cooling via heat exchanger prior to cold air blown via air supply component.

Strength:

The design of portable melted-ice portable air conditioner contained in the present invention is a unit-based cooling system available for independent power supply as it does not engage refrigeration by a power-consuming compressor. In addition, this device is highly mobile as it does not require attachment of heat exhaust ducts and condensate drain line. By the installation of this device, this system may further realize the load shifting at on-peak and off-peak hours of the home air-conditioning system.

Competing Products:

Vapor-Compression Portable Air Conditioner

Intellectual Properties:

The proposer has devoted to related researches on energy engineering and refrigeration as well as air-conditioning for many years, and has engaged fundamental research results and new development technologies in applied research. In recent years, the proposer further engages in technical cooperation with the industry concerning developments of patents and technology transfers, meanwhile implementing the research results into the industrial goals, which will help facilitate the R&D momentum in domestic energy technology and refrigeration and air-conditioning industry and gain reciprocity between industry and academia.

Contact:

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