附件四、技術說明表

鋰離子電池陽極材料

提案人： 呂宗昕 教授
單　位： 國立臺灣大學 化學工程學系/研究所
簡　歷：日本東京工業大學無機材料系博士
研究室網頁：http://homepage.ntu.edu.tw/~d01524001/index.ht
提案人：呂宗昕教授

市場及需求:

本技術係關於一種合成鋰離子電池陽極材料之新型技術，該材料為一種適用於電動車長期穩定使用之材料。與傳統電池技術相比，鋰離子電池充電速度更快、使用更持久，並且具有更高的功率密度，能以輕巧的體積提供更長效的電池續航力。本技術製備之鋰離子電池陽極材料，可經過特殊製程增加陽極材料導電度，可有效減少陽極材料阻抗，並使鋰電池快充放電速度大幅增加。

技術摘要(含成果):
本技術係一種鋰離子電池陽極材料之特殊增加導電度之方法，可有效減少陽極材料阻抗，及加快充放電速度，此類材料可應用於大容量鋰離子電池及儲電系統中。

優勢:
本技術製備高安全性之鋰離子電池陽極材料，透過本新型技術可有效減少陽極材料阻抗，及加快充放電速度。

競爭產品:
與本技術競爭產品為傳統鋰離子陽極材料。因既往製備所製備材料導電度不足，故無法增加充放電速度，使鋰電池發展受到限制。

專利現況:
(1)本技術將申請中華民國專利。
(2)本技術團隊教授具有研究陶瓷材料二十年以上經驗。
(3)本研究團隊具有十年以上研究螢光材料經驗。
(4)本技術團隊教授為本校特聘教授，並獲得多次國科會傑出研究獎。

聯絡方式(請不用填):
臺大產學合作總中心
Tel: 02-3366-9945,　E-mail: ordiac@ntu.edu.tw

Anode materials used in lithium-ion batteries

PI： Prof. Chung-Hsin Lu
Department of Chemical Engineering, National Taiwan U.

Experience:

Ph.D., Tokyo Institute of Technology, Department of Inorganic Materials

http://homepage.ntu.edu.tw/~d01524001/index.html

Market Needs:

The technology is related to synthesis anode materials of lithium-ion battery which are suitable for long-term stable use of electric vehicles. Compared to traditional battery technology, lithium-ion batteries can be charge faster, long-term use, and higher power density, and provide longer-lasting battery life in a lightweight package. This technology synthesizes the anode materials of lithium-ion battery using a new technology to increase the conductivity and reduce the impedance. Therefore, the charge/discharge speed of lithium-ion batteries can be greatly enhanced.

Our Technology:

The present technology is related to a surface modification process to reduce the reactions between the anode materials and the electrolytes in the lithium-ion batteries. This type of lithium-ion batteries can be used in the large capacity batteries and the energy storage system.

Strength:

This technology uses new methods to prepare the lithium-ion batteries with high safety. This technology can reduce the impedance of anode materials and increase the charge/discharge speed.

Competing Products:

The conductivity of previous anode materials is insufficient. Therefore, the charge/discharge speed of lithium-ion batteries is limited.

Intellectual Properties:

(1) This technology will be filed as a patent in our country.

(2) The professor in the research team has studied ceramic materials for more than twenty years.

(3) The research team has studied phosphors materials for more than ten years.

(4) The professor in the research team is a distinguished professor at NTU, and has obtained many rewards from NSC.

Contact (do not need to fill out):

Center for Industry-Academia Collaboration, NTU
Tel: 02-3366-9945, E-mail: ordiac@ntu.edu.tw