



## 新型鋰離子電池陽極材料製備方法

(以下內容一頁為限，不可揭露關鍵技術內容；填表完成後請刪除此行)

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### 市場及需求：

本技術係關於一種合成鋰離子電池陽極材料  $TiNb_2O_7$  及  $Ti_2Nb_{10}O_{29}$ ，一種適用於電動車長期穩定使用之材料。與傳統的電池技術相比，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，設計新穎成份，可有效提高電池電容量且增加電池長期使用之穩定性，符合電動車的市場需求。

### 技術摘要(含成果)：

本技術係一種鋰離子電池陽極材料之製備方法，可有效提高充放電容量，及循環壽命可以被改善。此種陽極材料合適應用於可再生能源科技及電動車產業。

### 優勢：

本技術製備高結晶性鋰離子電池陽極材料，透過本新型技術可製備出具有特殊高電容量之陽極材料，電池測試結果顯示出良好循環壽命。

### 競爭產品：

與本技術競爭產品為傳統鋰離子陽極材料製備技術。因既往製備條件過程難以獲得高容量產品，故發展受到限制。

### 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。

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## New synthesis method for anode materials used in lithium ion batteries

(Below is limited to 1-page only; be careful not to disclose vital technology content. Please delete these words when the document is finished)

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### Experience:

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

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### Market Needs:

The technology is related to synthesis anode materials  $TiNb_2O_7$  and  $Ti_2Nb_{10}O_{29}$  of lithium-ion battery which is 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. Moreover, provided longer-lasting battery life in a lightweight package. This technology synthesizes the anode materials of lithium-ion battery. The capacity and cycling time can be effectively enhanced. This kind of materials can be applied to electric vehicles application.

### Our Technology:

The present technology is related to a process to prepare anode materials of lithium-ion batteries. The capacity and cycle life of lithium ion batteries can be improved. This type of anode materials is suitable application in renewable energy technology and electric vehicle industry.

### Strength:

This technology uses new methods to increase the capacity and cycle time of lithium-ion battery anode material. This kind of materials can be applied to the energy storing devices.

### Competing Products:

The previous conditional process is hard to prepare high capacity anode materials. Therefore, the application 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):

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