

附件四、技術說明表



氧化鈰粉體製備技術

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：

本技術係關於一種使用於化學機械研磨 (Chemical-Mechanical Polishing, CMP) 的材料。化學機械研磨為半導體製程中重要技術，而該研磨過程中需要特殊陶瓷粉體，其形貌及大小需精確控制，以提高半導體製程之良率。

技術摘要(含成果)：

本技術利用特殊反應劑進行反應，可合成特定之氧化鈰粉體。相較於傳統製程，透過本技術可於低溫及短時間下，合成高結晶性之氧化鈰粉體，本製程粉體可應用於半導體 STI (Shallow trench isolation) 製程及其他研磨程序上。

優勢：

透過此技術可於低溫及短時間下合成高結晶性之氧化鈰粉體，有效減少能源使用。

競爭產品：

既往氧化鈰粉體製備方法需高溫及長時間製備，耗費能源，且容易造成環境問題。

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) 本研究團隊具有二十年以上研究粉體材料經驗。
- (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



Preparation technology of cerium oxide powders

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:

This technology is related to a kind of materials used in Chemical-Mechanical Polishing (CMP) process. CMP process is an important technology used in the semiconductor process. In this process, special ceramic powders with well-controlled morphology and sizes are required for increasing the yield of the processes.

Our Technology:

This technology utilizes special reactants to prepare specific cerium oxide powder. The prepared powders with high crystallinity can be synthesized at low temperatures during short time. The prepared cerium oxide powder can be applied to STI (Shallow trench isolation) process.

Strength:

This technology can synthesize cerium oxide powders with high crystallinity at low temperatures during short time. This process can reduce the required energy.

Competing Products:

The previous technology for preparing cerium oxide requires high temperatures and long reaction time. This kind of process need a large amount of energy and will cause some environment problems.

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: 02-3376-9945, E-mail: ordiac@ntu.edu.tw