新穎螢光材料製備方法

技術人： 呂宗昕 教授
單　位： 國立臺灣大學　化工學系/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.html

市場及需求:

本技術係關於一種石榴石型螢光粉體，尤其是，一種適用於發光二極體光源之螢光粉體。發光二極體(LED)是一種無汞的環保光源，同時具有低耗電、高使用壽命、反應速率快、無熱輻射、體積小等優點。本技術製備之螢光粉體，以藍光激發光激發，可產生寬廣黃光放射峰，可因藍光與黃光加成，而產生白光，以做為白光 LED 使用，極符合照明產業及顯示器產業之需求。本技術之螢光粉體，可單獨使用，亦可與其他螢光粉體組合使用。本技術復提供一種發光裝置，其具有本技術之螢光粉體。

技術摘要: 本技術係一種石榴石型螢光體之製備方法，可控制螢光體粒徑。另可製備高亮度黃光螢光體，配合藍光 LED，可用於白光 LED 發光裝置，俾符合照明及顯示器產業需求。

優勢:

根據本技術利用反應設計，配合特殊反應條件，控制反應氣氛，以製備高亮度螢光粉體。可獲得高發光亮度之螢光體，在藍光激發下，可產生有效黃光。

競爭產品:

與本技術競爭產品為傳統黃光螢光材料製備技術。因傳統製備技術無法控制粉體粒徑，且粉體態不均一。本技術可改善上述缺失，提高產品競爭力。

專利簡述:

(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: 臺大產學合作總中心
Tel: 02-3366-9945,　E-mail: ntuciac@ntu.edu.tw

本資料僅供國立臺灣大學專利/技術申請使用，嚴禁使用全部或部分內容於其他用途。若有疑問請與我們聯繫，我們將盡力協助您。

New Synthesis Process for Phosphors

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 a kind of garnet-structured phosphors which can be used for white-light LED. Led is a kind of energy-saving devices which have the advantages of low-power, long life, fast response rate, and non-radiative, and small volume. The phosphors produced via the present technology can be excited by blue light to produce yellow light. The combination of yellow and blue light can generate white light for the real lighting application. The produced phosphors can be combined with other phosphors. The produced phosphors can be used for various lighting technology.

Our Technology:

The present technology is related to a process to prepare garnet-structured phosphors. This process can control the grain sizes of the garnet phosphors. The prepared phosphors can generate yellow light to combine blue LED for producing white light. The combined devices can be used for lighting technology.

Strength:

This technology use the design of reactions combined the synthesis conditions to prepare the phosphors having high luminescence. The prepared phosphors can generate yellow light under the excitation of blue light.

Competing Products:

The previous conditional process is hard to control the grain sizes of garnet-structured phosphors. The morphology of the powders is difficult to control.

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 Cooperation, NTU
Tel: 02-3366-9945, E-mail: ntuciac@ntu.edu.tw

This information herein is intended for potential license of NTU technology only. Other usage of all or portion of this information in whatever form or means is strictly prohibited. Kindly contact us and we will help to achieve your goal the best we can.