



## 製造多孔矽顆粒之方法及執行該方法之製造設備

提案人：藍崇文 特聘教授

單位：國立臺灣大學 化學工程學系/研究所

簡歷：請參閱系所網頁

<http://www.che.ntu.edu.tw/che/?p=501>

市場及需求: 光伏、半導體電子元件、催化、薄膜基材、陶瓷、濕度傳感器等市場。

**技術摘要(含成果):** 一種製造多顆二氧化矽顆粒之方法。本發明之方法首先係對水執行氣霧化製程以產生多個水微液滴。接著，本發明之方法係將矽鹵化物液體溶入有機溶劑形成反應溶液。接著，本發明之方法係持續攪拌反應溶液，且將多個水微液滴導入反應溶液內，致使多個水微液滴與反應溶液中之矽鹵化物液體反應成多個二氧化矽微粒。接著，本發明之方法係清洗反應溶液，以取得多個二氧化矽微粒。最後，本發明之方法係對多個二氧化矽微粒執行乾燥製程，進而獲得多個二氧化矽顆粒。

**優勢:** 提供一量產方法，製造粒徑均一且呈球狀的多顆二氧化矽顆粒

**競爭產品:** 市面上的  $\text{SiO}_2$  材料

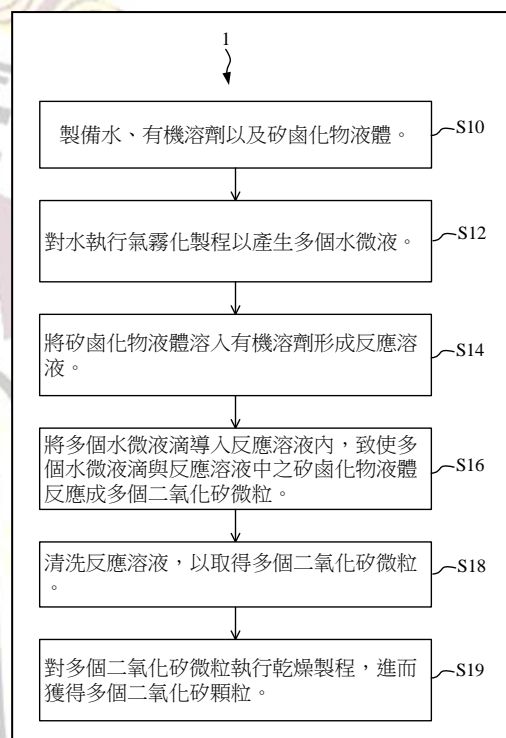
**專利現況:**

- (1) 本技術已有相關專利 (中華民國專利申請號: XXXX; 美國專利證號: XXX)。
- (2) 本研究團隊具有數十年研究經驗...
- (3) 其他...

**聯絡方式(請不用填):**

臺大產學合作總中心

Tel: 02-3366-9945, E-mail: [ntuciac@ntu.edu.tw](mailto: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。

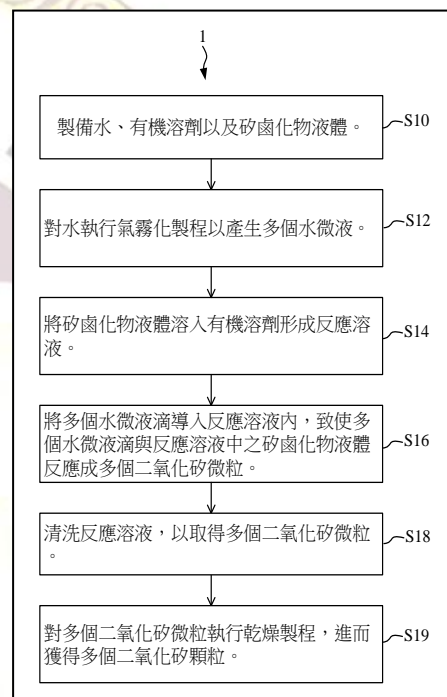


## METHOD OF MANUFACTURING SILICON DIOXIDE PARTICLES

**PI :** Prof. Chung Wen Lan  
 Department of Chemical Engineering,  
 National Taiwan University

### Experience:

The invention discloses a method of manufacturing a plurality of silicon dioxide particles. Firstly, the method according to the invention is to perform a nebulization process on a water to generate a plurality of water micro-droplets. Next, the method according to the invention is to dissolve a silicon halide liquid into an organic solvent to form a reaction solution. Then, the method according to the invention is to continuously stir the reaction solution, and to introduce the plurality of water micro-droplets into the reaction solution such that the plurality of water micro-droplets react with the silicon halide liquid in the reaction solution into a plurality of silicon dioxide corpuscles. Next, the method according to the invention is to wash the reaction solution to obtain the plurality of silicon dioxide corpuscles. Finally, the method according to the invention is to perform a drying process on the plurality of silicon dioxide corpuscles to obtain the plurality of silicon dioxide particles.



### Market Needs:

SiO<sub>2</sub> is used for the manufacturing of glass, quartz glass, soluble glass, optical fiber, important components of the electronics industry, optical instruments, crafts, and refractory materials.

### Our Technology:

The invention discloses a method of manufacturing a plurality of silicon dioxide particles. It could produce sphere shape particles with similar size. It is easy, low cost.

### Strength:

The invention could produce sphere shape particles with similar size. It is easy, low cost.

**Competing Products:**

Silicon Dioxide SiO<sub>2</sub> particles

**Intellectual Properties:**

The invention could produce sphere shape particles with similar size. It is easy, low cost.

**Contact (do not need to fill out):**

Center for Industry-Academia Cooperation, NTU

Tel: 02-3366-9945, E-mail: [ntuciac@ntu.edu.tw](mailto:ntuciac@ntu.edu.tw)