



以矽泥廢料製造高模數水玻璃之方法

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：半導體及相關產業

技術摘要(含成果)：一種以矽泥廢料製造高模數水玻璃之方法。本發明之方法首先係將從矽泥廢料製備成的多顆矽顆粒與鹼金屬氧化物顆粒均勻混合。接著，本發明之方法係將均勻混合之多顆矽顆粒與多顆鹼金屬氧化物顆粒加熱至第一溫度且維持第一時間長度，致使多顆矽顆粒與多顆鹼金屬氧化物顆粒反應成多顆鹼金屬矽酸鹽顆粒。接著，本發明之方法係將水加入多顆鹼金屬矽酸鹽顆粒成漿料。接著，本發明之方法係於第二溫度下，攪拌漿料且維持第二時間長度。最終，本發明之方法將漿料過濾，即獲得高模數水玻璃之溶液，其中高模數水玻璃之模數範圍為大於或等於 2。

優勢：廢棄的矽泥回收再利用

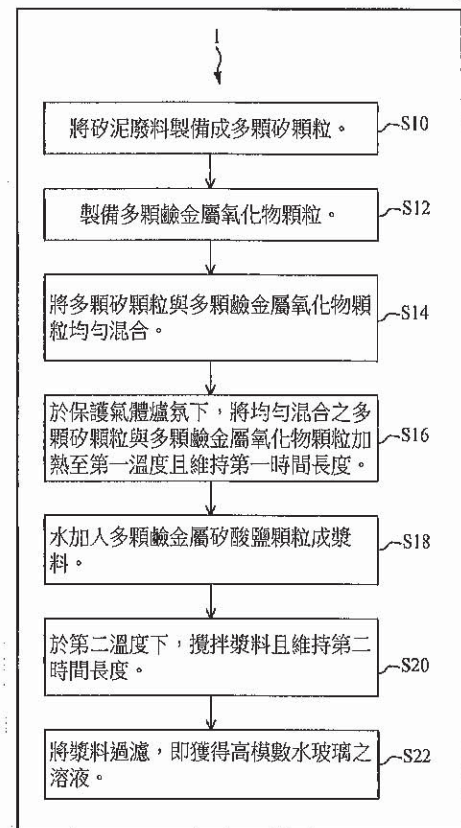
競爭產品：市面上水玻璃成品

專利現況：申請中

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





METHOD OF MANUFACTURING SILICON MONOXIDE DEPOSIT BY USE OF SILICON KERF WASTE

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

Experience:

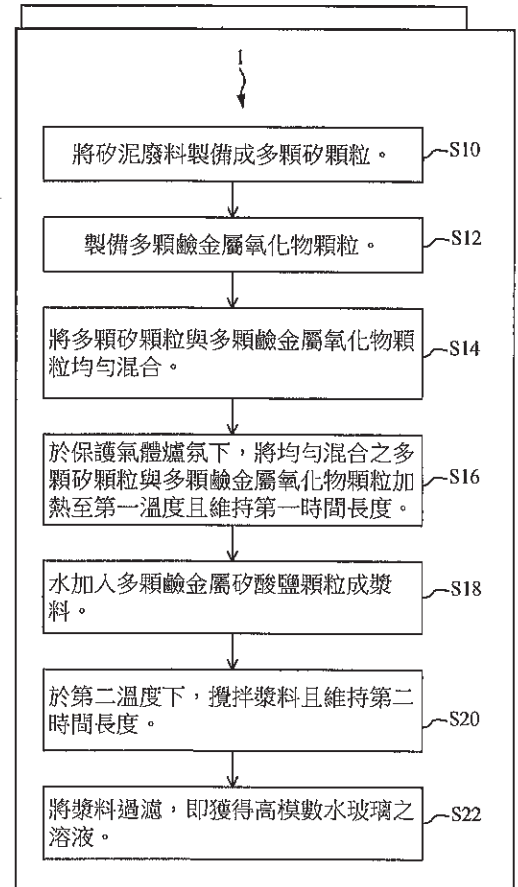
Refer to <http://www.che.ntu.edu.tw/che/?p=501>

Market Needs:

Semiconductor Industry

Our Technology:

The invention discloses a method of manufacturing a high-modulus water glass by use of a silicon kerf waste. Firstly, the method according to the invention is to uniformly mix a plurality of silicon particles prepared from the silicon kerf waste with a plurality of alkali metal oxide particles. Then, the method according to the invention is to heat the plurality of uniformly mixed silicon particles and alkali metal oxide particles at a first temperature for a first time period, such that the plurality of silicon particles react with the plurality of alkali metal oxide particles into a plurality of alkali metal silicate particles. Next, the method according to the invention is to add a water into the plurality of alkali metal silicate particles to form a slurry. Then, the method according to the invention is to stir the slurry at a second temperature for a second time period. Finally, the method according to the invention is to filter the slurry to obtain a solution of the high modulus water glass, where the modulus of the high modulus water glass ranges from 2 or more.



Strength:

Recycle the waste silicon

Competing Products: Existed water glass product

Intellectual Properties: Patent Pending

Contact (do not need to fill out):

Center for Industry-Academia Collaboration, NTU

Tel: 02-3366-9945, E-mail: ordiac@ntu.edu.tw