

Method For Forming Tio2 Paste At Ambient Temperature

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ABSTRACT

A method for TiO₂ paste preparation is provided. The method (100) for TiO₂ paste preparation eliminates heating/annealing step for the TiO₂ paste preparation usually carried out in the conventional method for preparing TiO₂ paste. The method (100) for forming TiO₂ paste at ambient temperature may include mixing titanium butoxide, methoxy-ethanol and acetyl acetone to obtain a TiO₂ solution.

Another solution may be formed by mixing of an epoxy binder and hardener at ratio 3:1. The mixer of the epoxy binder and hardener is stirred to obtain a binder-hardener solution. Further, the method (100) may include mixing the TiO₂ solution and the binder-hardener solution to obtain the TiO₂ paste at the ambient temperature. To obtain the TiO₂ paste at ambient temperature, the ratio of TiO₂ solution to epoxy binder to hardener is 1:3:1.

KEY APPLICATION AREAS

1. Solar cell manufacturing.
2. Photovoltaic devices.
3. Transparent TiO₂ coatings.
4. Printed electronics.
5. Functional thin-film coatings.

POTENTIAL USE

1. Ambient-temperature TiO₂ paste preparation.
2. Transparent photoanode fabrication for solar cells.
3. Screen printing and blade coating of TiO₂ films.
4. UV-cured transparent coatings.
5. Low-cost, high-throughput coating processes.