High Dispersed Screen-Printable Nanocomposite Paste for Self-Cleaning Glass

Description of project (项目简述)

- Background: Our R&D group developed a kind of high dispersed screen-printable paste which contains nanoscale semiconductor particles. By using the paste, a high transparent, superhydrophilic film can be achieved. Such film can be utilized as the photoactive layer of Dye-sensitized solar cells and the functional film of superhydrophilic self-cleaning glass.
- Application area: Photovoltaic, Building materials
- Market: The developed paste is one of the nanocomposite products which could be used not only for the photoanode of dye-sensitized solar cells, but also the self-cleaning glass. It has great market value in the near future.

Highlights of innovation （项目创新点）

- Low fabrication cost
- Easy large-scale production
- Relatively high photoelectric conversion efficiency
- Superior photocatalytic properties

TECHNICAL SPECIFICATION (技术参数)

- Transparency > 78%
- Film thickness adjustable: 200nm-2000nm
- Diameter of the nanoparticle: <40 nm
- Life time> 10 years (For self-cleaning glass)
- Photo-electric conversion efficiency>13% (For dye-sensitized solar cell)

ECONOMIC & MARKET (经济性和市场分析)

Dye-sensitized solar cells have been treated as one of the most promising PV devices to replace the traditional silicon based solar cells. It has superior photoelectric conversion efficiency and extremely low fabrication cost. It is expected to dominate 20% of the solar cell market by the end of 2020. Our developed paste is one of the most important components of the dye-sensitized solar cells.

Besides, the developed paste could also be used to produce self-cleaning glass, which can automatically remove the surface dust by using the rainwater and the sunshine. The cost of the self-cleaning coatings will be no more than 2 US $ per square meter.

IP, PRODUCTS ETC (专利，产品等)

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PARTNER (合作伙伴)

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