Titanium Oxide as the Window Layer for Metal Chalcogenide Photovoltaic Devices

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INNOVATION

Professor Yang and colleagues have developed a transparent charge collection layer for solar cells. The technology's solution processable window results in significantly lower manufacturing costs compared to vacuum-deposited materials, such as standard zinc oxide. Solution coating can cause less damage to lower layers than magnetron sputtering, and may allow for use of a simpler, cheaper device structure that omits the cadmium selenide layer. The technology can be used in CuInSe2 solar cell devices, with potential use in other types of solar cells. Other applications include UV absorbing coatings for windows.

PATENT STATUS

Country	Type	Number	Dated	Case
United States Of America	Issued Patent	9,780,238	10/03/2017	2011-853

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OTHER INFORMATION

KEYWORDS

Solar charge collection layer, transparent, UV absorbing coatings

CATEGORIZED AS

- **Energy**
  - Solar
  - Storage/Battery

RELATED CASES

2011-853-0

ADDITIONAL TECHNOLOGIES BY THESE INVENTORS

- Two-Step Processing With Vapor Treatment Of Thin Films Of Organic-Inorganic Perovskite Materials
- Silver Nanowire-Indium Tin Oxide Nanoparticle As A Transparent Conductor For Optoelectronic Devices
- Efficient and Stable Perovskite Solar Cells with All Solution Processed Metal Oxide Transporting Layers
- High Performance and Flexible Chemical And Bio Sensors Using Metal Oxide Semiconductors
- Conjugated Polymers with Selenium Substituted Diketopyrrolopyrrole Unit for Electronics Devices
- Design of Semi-Transparent, Transparent, Stacked or Top-Illuminated Organic Photovoltaic Devices
- Novel Polymers for Polymer Solar Cells, Transistors, and Sensors