

Thin films for organic solar cells



Researcher from Unicamp have developed a new process to produce a multilayers thin-film with photoelectrochemical properties using polymer materials and carbon nanotubes intercalated by depositing layer by layer.

Potential uses:

- Production of active layers of organic solar cells;
- Production of solar cells more flexible and pliable, allowing the application to fabrics, plastics, acrylics, etc.

Advantages:

- Good photoelectrochemical response intensity.
- No silicon or non-renewable materials is required, reducing the environmental impact.
- Production of flexible and foldable organic solar cells.

PATENT STATUS

Patent applications filled at INPI

INTERNAL CODE

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FOR FURTHER INFORMATION:

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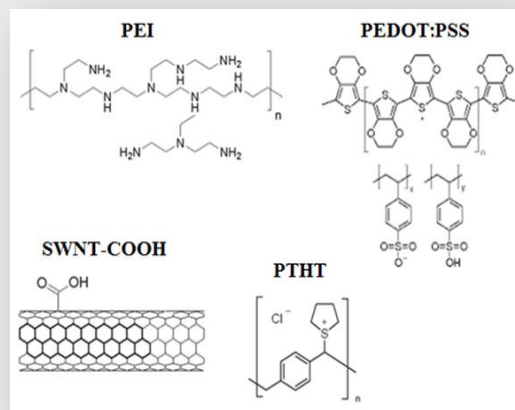
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Production of photoelectrochemical multilayer thin films for organic solar cells

The research and development of solar cells and photovoltaic arrays has increased recently due to the possibility of these devices provide clean and reliable power. This invention relates to a new solution for the production of multilayers thin films produced through deposition layer by layer, using mainly polifenilenovinileno (PPV) and single-wall carbon nanotubes (SWNT).

The main materials used in preparing such films are single wall carbon nanotubes functionalized with carboxyl groups (-COOH SWNT), poly (3,4-etilenodioxotiofeno)-poly (esti-renossulfonato) (PEDOT: PSS), polyethylenimine (PEI) and poly (xilili-denotetraidrotiofeno) (PTHT). The compounds are shown in the figure.

The results of the invention indicate that the materials used have a strong influence on the transfer process on the cell loads, producing larger and more stable currents.



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