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Polymer substrates for flexible photovoltaic cells application in personal electronic system

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Abstract:

The article presents an overview of polymeric materials for flexible substrates in photovoltaic (PV) structures that could be used as power supply in the personal electronic systems. Four types of polymers have been elected for testing. The first two are the most specialized and heat resistant polyimide films. The third material is transparent polyethylene terephthalate film from the group of polyesters which was proposed as a cheap and commercially available substrate for the technology of photovoltaic cells in a superstrate configuration. The last selected polymeric material is a polysiloxane, which meets the criteria of high elasticity, is temperature resistant and it is also characterized by relatively high transparency in the visible light range. For the most promising of these materials additional studies were performed in order to select those of them which represent the best optical, mechanical and temperature parameters according to their usage for flexible substrates in solar cells.