

Photovoltaic dye sensitized solar cells: paving the way to commercialization

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The electric power produced by photovoltaic panels is already very close to the electricity market price. Photovoltaics have the ability to produce electricity where it is consumed, using buildings as support. New technologies are emerging with the ability to merge into buildings' structure. Dye sensitized solar cells (DSC) belong to the so-called third generation of photovoltaic cells and are front positioned to lead the building-integrated photovoltaic (BIPV) market. DSCs are very aesthetic, with various patterns and colors, and show a unique ability to harvest efficiently the diffuse sunlight, making them suitable for façades.

The interest in dye-sensitized solar cells has been increasing and few companies are now working hard to make this new technology available soon. Sealing these cells is still an issue and despite significant progresses, Sanyo considers this as the main obstacle for their fully commercialization. Recently, the author's team developed a laser-assisted glass sealing, leak free, resistant to heat shock and cheaper to implement. Besides, it was also developed a new glass substrate exhibiting a significant higher electrical conductivity and a larger effective area for solar conversion.