Transparent Solar Cells

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Agenda

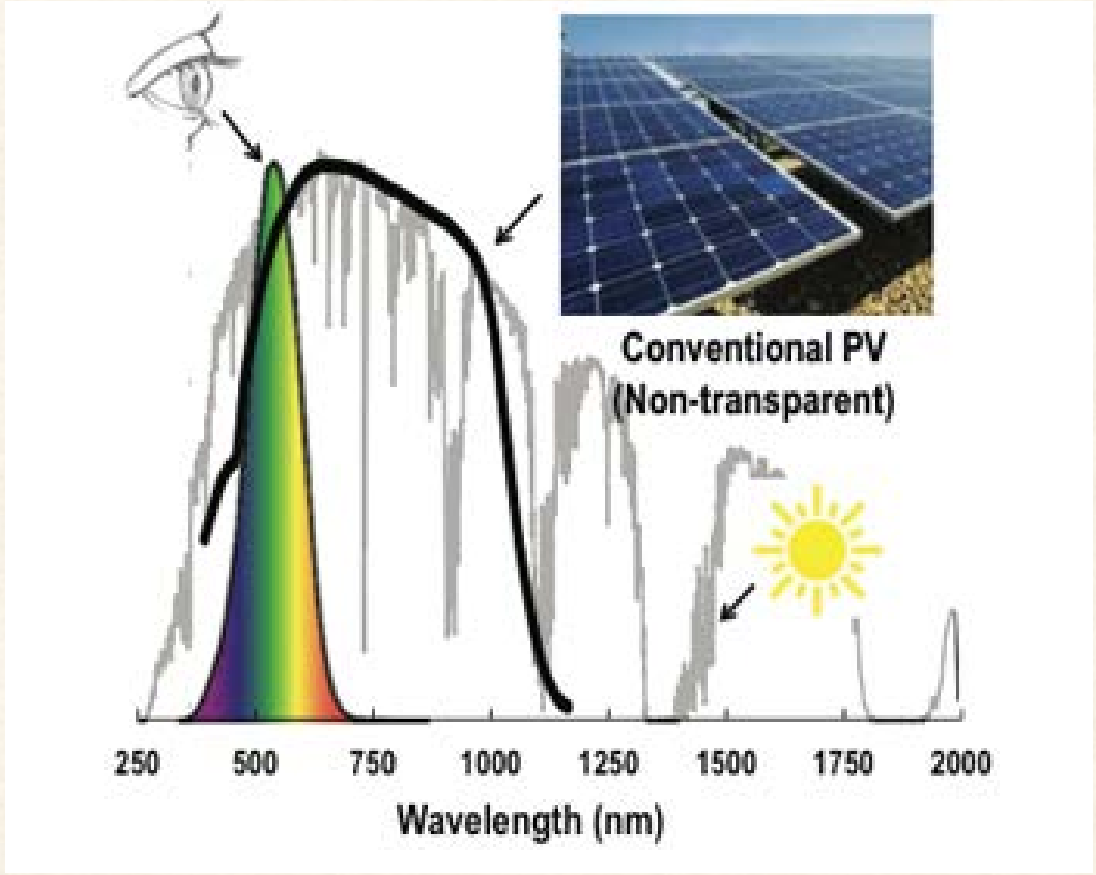
- Introduction
- Design of Transparent Solar Cells (TSC)
- Applications
- Summary

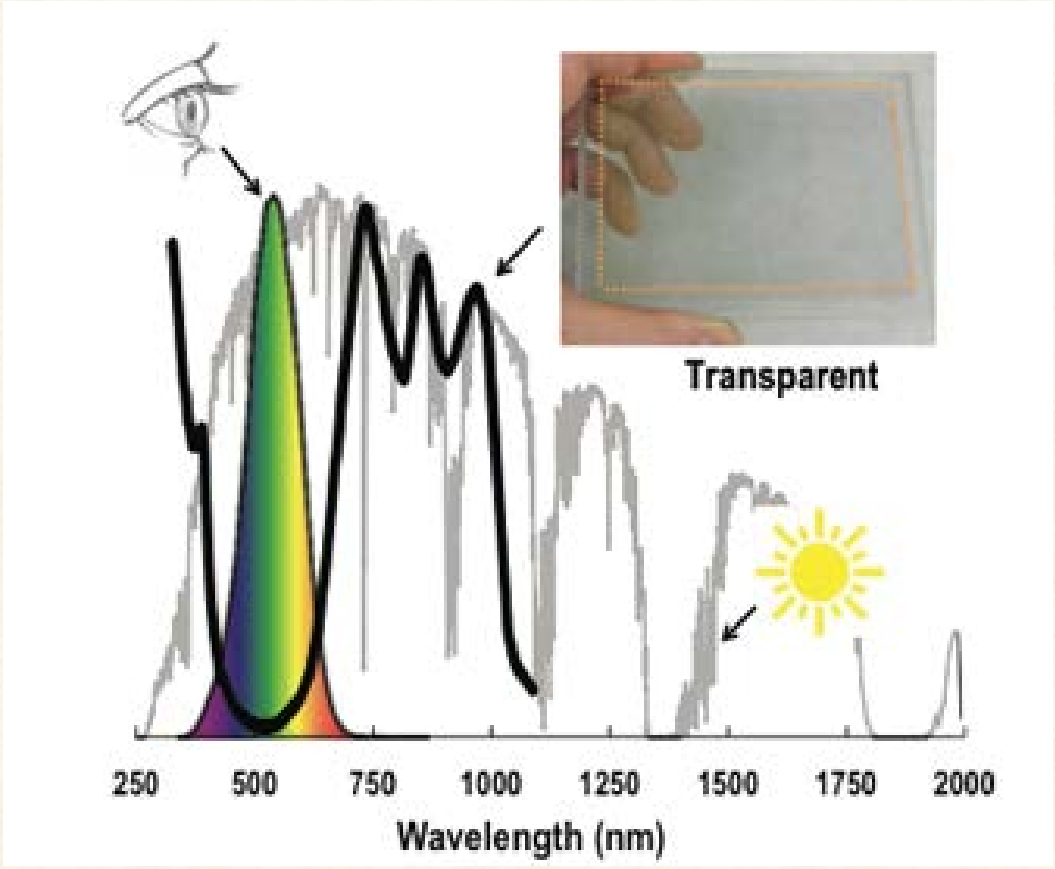
Introduction

- Transparent Solar Cells
- Skyscraper’s windows
- Any surfaces
- New technology

Transparent Solar Cells

Solar Spectrum



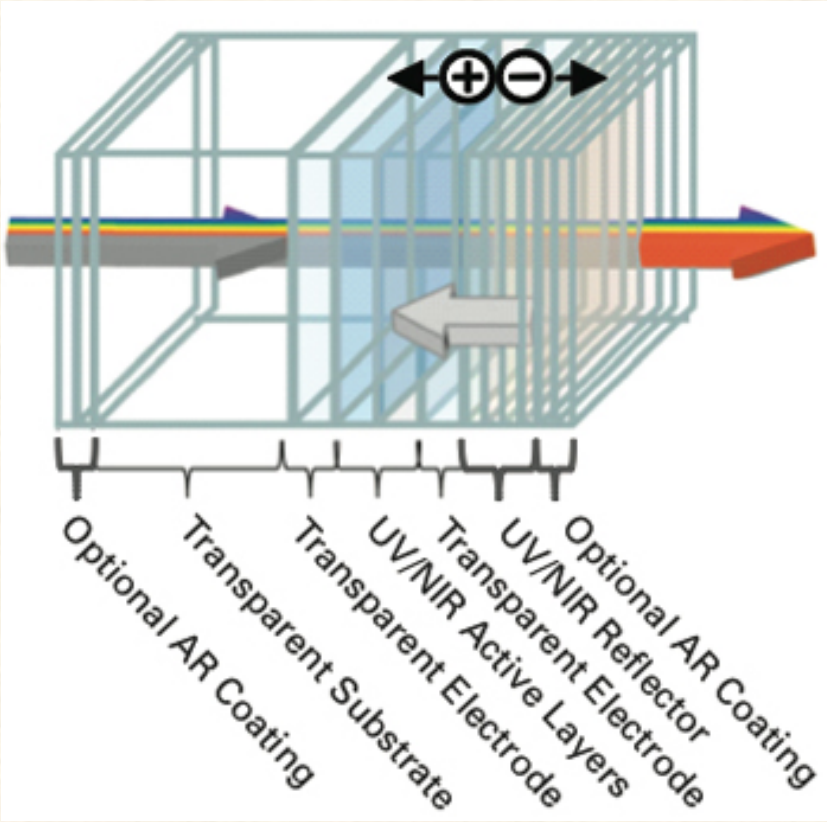


Transparent Solar Cells (Organic)

Design

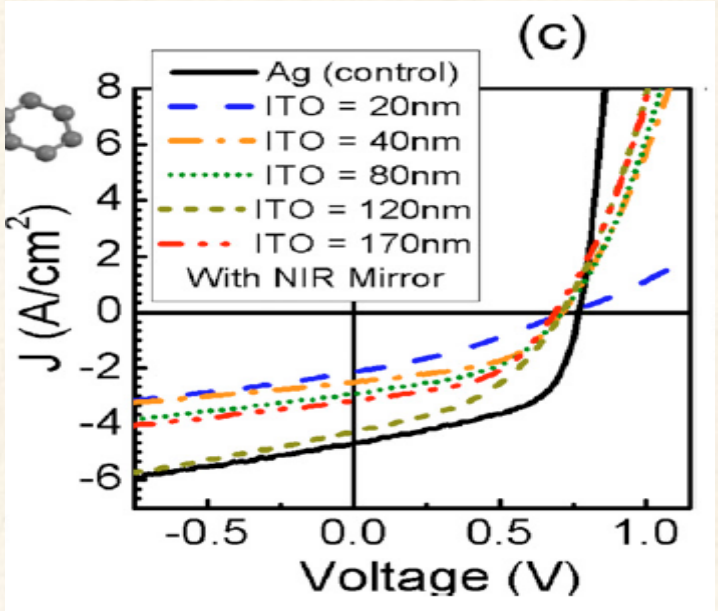
- Glass substrates coated with indium-tin oxide (ITO) transparent anode, chloroaluminum phthalocynine (ClAlPc), a molecular acceptor, C_{60}, bathocuproine (BCP), molybdenum trioxide (MoO_3), and ITO cathode
- Distributed Bragg reflector (DBR) as a transparent near-infrared anti-reflection coating

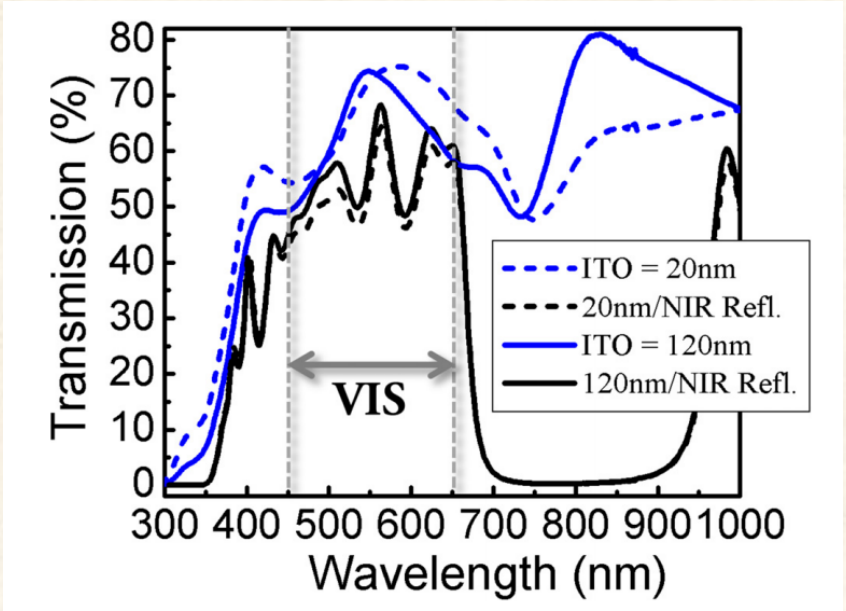
$$E = \frac{hc}{\lambda}$$

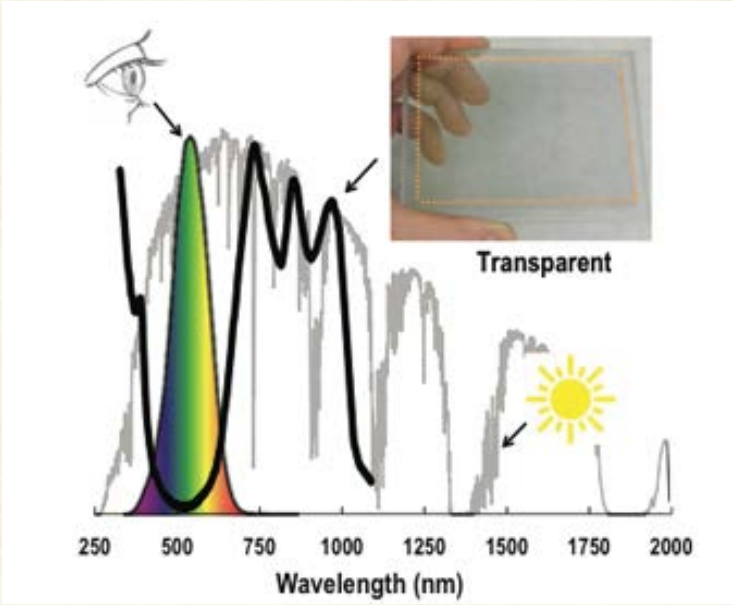


Transparent Solar Cells

Design Continued

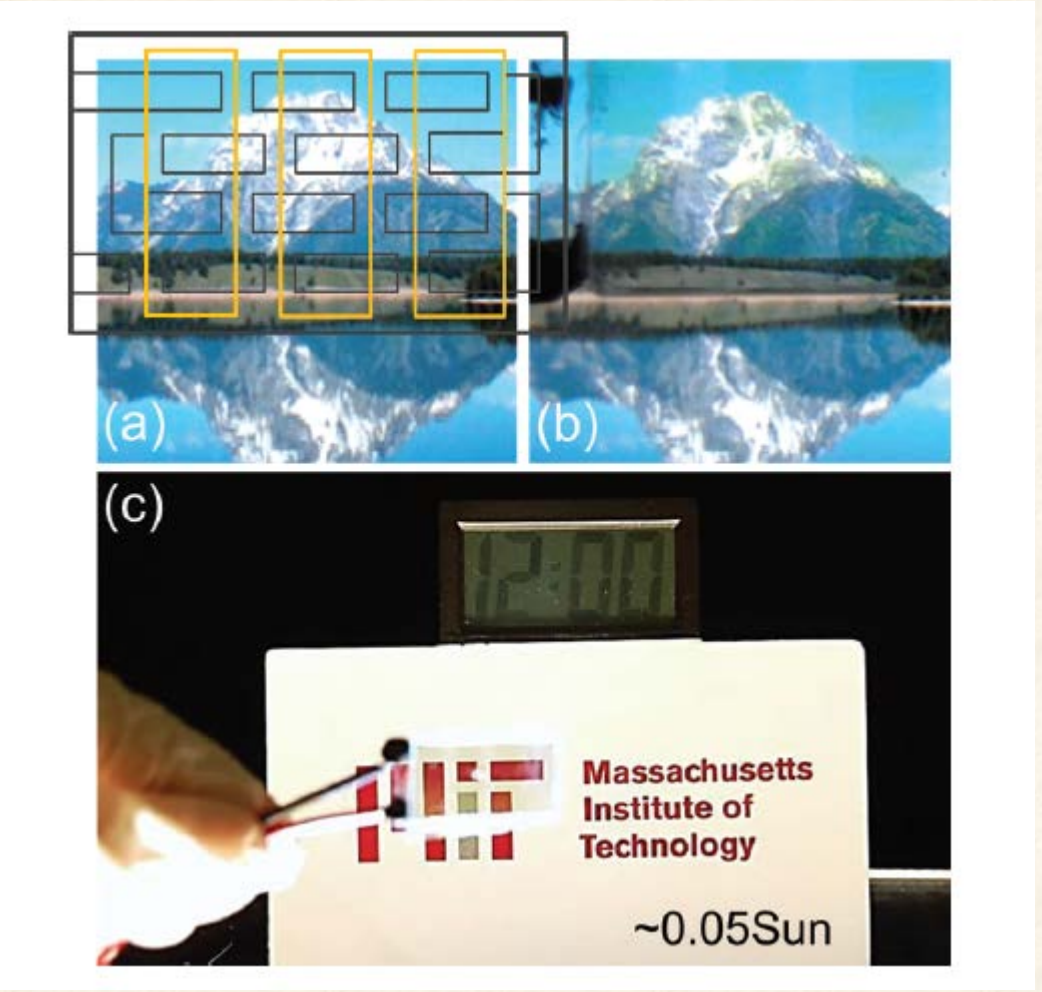






Real World Application

- Windows
- Portable electronic devices
- Any surfaces



Summary

- High Transparency
- Low power conversion efficiency
- Needs improvement

Questions?

References

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