

ACTIVE MATERIAL FOR SIMULTANEOUS CONVERSION AND STORAGE OF SOLAR ENERGY

For solar energy systems capable of sustained and enhanced activity after termination of light exposure.

Technology Overview

The North-West University (NWU) has pioneered the novel use of Europium-Tellurium-Oxide (ETO) in the production clean energy. ETO is a light-chargeable catalyst material that exhibits sustained and enhanced activity after light excitation has ended. Its unique characteristics presents an opportunity for utilisation as a new and efficient type of active material in photovoltaic (PV) cells for converting and storage of solar energy. ETO has further applications as catalyst in the chemical reaction for producing hydrogen and in fuel cells for generating electricity.

Technology Benefits

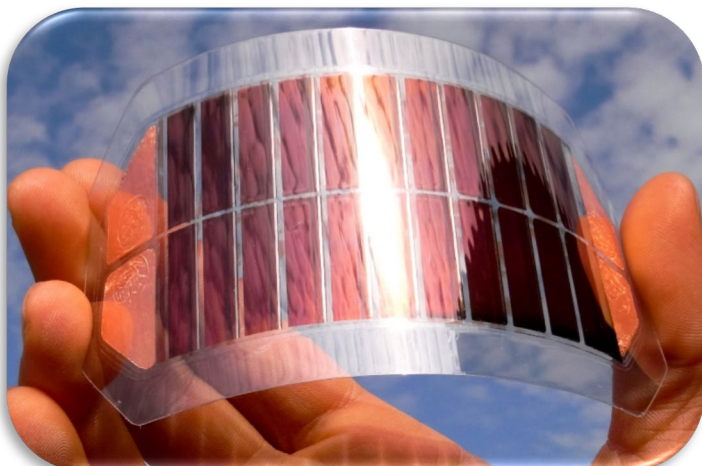
- Environmentally friendly material for clean energy solutions.
- Unlike other materials of comparable use, ETO retains activity after light excitation.
- Enhanced activity for more efficient solar energy conversion and storage.
- Potential applications in the electronics industry.

Market Opportunity

World use of photovoltaics for energy supply growing rapidly. The global PV market size is expected to reach USD 333.72 billion by 2026 at a compound annual growth rate (CAGR) of 25.1%. The PV installations in the world grew by 36.8% CAGR between 2010 and 2018. Si-wafer based PV technology accounted for about 95% of the total production in 2017. There is an opportunity for introducing Europium-Tellurium-Oxide based solar cells, driven by better value proposition. The global hydrogen fuel cell market is forecast to reach USD 49.12 Billion by 2026.

Project status

- Patent filed in the Netherlands.
- PCT (Patent Cooperation Treaty) filed as well.
- We are currently seeking partnerships/investment for further development and licensing of the technology.



Contact: North-West University Technology Transfer & Innovation Support Office

Dr Mesuli Mbanjwa

+27 (0)18 299 4902

Mesuli.Mbanjwa@nwu.ac.za