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Fluoropolymers: Renewable Energy

Introduction

Europe is at the forefront of the development and the use of renewable energy and has one of the most ambitious goals for the future in this respect.

Europe is a leading market in photovoltaic as well as in wind energy. France and Germany are leading in geothermal energy.

Fluoropolymers combine properties that help to improve components of renewable energy.

Applications

- **Photovoltaic:**
 - Front sheets: protected by fluoropolymers, provide weather resistance, ultraviolet blocking, optical transparency, fire resistance
 - Back sheets: improve electrical insulation, protection from weathering and chemicals
 - Vents: fluoropolymers are used e.g. in junction boxes
- **Wind turbines:**
 - Control centers for offshore windparks
 - Paints and coatings: long term protection against weathering to increase product life, extend maintenance cycles
 - Release film: support production of composite turbine blades esp. for offshore
 - Turbine PTFE bearings
- **Fuel Cells and flow batteries:**
 - Ionomer exchange membranes
 - Energy storage: used as a component e.g. binders which provide chemical, heat and oxidation resistance, and long term storage of renewable energies and stationary energy storage

Benefits

- Excellent chemical, corrosion and abrasion resistance; low and high temperature resistance -> increased lifetime of components (fuel cells, batteries, photovoltaics etc.)
- Lower maintenance costs
- Increased efficiency in manufacturing processes
- Enabling sustainable energy and facilitating remote location of installations
- Design flexibility

For more information:

<http://www.plasticseurope.org/fluoropolymers>



Innovations

This is a dynamic area in a constant innovation mode with fluoropolymers a key enabler. Specific example would be high voltage batteries, flexible PV front sheet and high durability fuel cells.

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