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PV Module Based on Vertical Solar Cell

Objective

The project aims at improving the efficiency and reducing the costs of silicon solar cells through the use of vertical multijunction solar cells for concentrated PV systems and as a good alternative of planar solar cells.

The main goals of the project are the development of a designed and patented diffusion welding method for multijunction silicon structure formation, as well as of a new production process of vertical silicon solar cells. Vertical silicon solar cells are the most simple and demand the least amount of technological steps, as well as provide uniformity of wafer bonding.

Expected outcomes

- Optimisation of the technology and creation of the samples of the vertical solar cells
- Construction and testing of PV modules based on the vertical solar cells and Fresnel lens
- Preparation of technical specification and technological documentation

Company description

“Research Institute of Ecological Problems of Energetics”, LLC (RIEPE) is an independent research company affiliated to the Engineering Academy of Armenia. The main activities are in energy research issues, such as the modelling and analysis of energy-environment interactions, energy efficiency improvements and energy conservation programmes. Further work is on the integration of the technologies directed towards the rational use of energy and optimisation of the solar energy production and consumption systems.

Research Partner

Institute for Solar Energy Research Hamelin - ISFH, Germany (www.isfh.de)

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