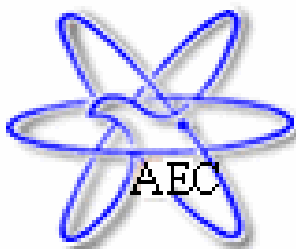


PRESS RELEASE

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Development of the High Concentration Photovoltaic (PV) System in Taiwan

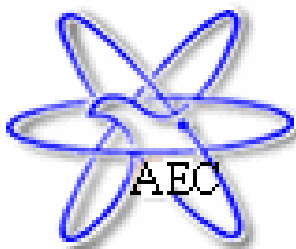
While the soaring oil prices and the reduction of CO₂ have increasingly turned into important global issues, non-polluting sources such as solar, wind, biomass, wave, tidal, geothermal or hydropower are becoming promising power energy. To fulfill the mandate of developing clean energy, the Institute of Nuclear Energy Research (INER), located at Longtan, has successfully applied the technology developed from its research on radiation detectors in the early years to the development of the compound semiconductor solar cell, module, and solar tracking system.

Incorporating the self-developed, high efficiency III-V solar cells and Fresnel lens, INER has completed the development of the high concentration photovoltaic(HCPV) module, which has the geometrical concentration ratio of 500 times. So far, the conversion efficiency of the module has reached 20%, and the optical efficiency 70%, hopefully approaching 80% by the end of 2007. In addition, INER has also developed an energy-saving, high precision solar tracking system, with tracking precision within 0.5 degree and energy losses less than 5%. The tracker, together with the concentration HCPV module, will be able to track the sun more precisely, and generate more solar power.

In terms of high efficiency III-V solar cells, INER with the coordination of domestic companies has completed a prototype with energy conversion efficiency over 31%, and will continue to enhance the technology of epitaxy manufacturing process in the future in order to produce the cells with energy conversion efficiency of 45%. At the end of 2006, INER has already set up 1.2kW and 5kW concentration PV demonstration systems, and now the 100kW system is been established. As to the 1MW HCPV demonstration system, it will be set up by the end of 2008. All these efforts will help the industry accumulate the mass production capability of concentration solar systems and build a solid foundation for the future solar power market.

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During the course of research and development, INER applied for 20 items of invention and utility model patents worldwide, mostly on the epitaxy manufacturing process, component manufacturing process, module manufacturing process, and solar tracking technology. Among these applications, eight patents have been granted.

Currently INER is setting up its capabilities of solar tracking, concentration module development, the concentration multi-junction solar cell manufacturing process, and measurement technology. Through open bidding, companies which win the bid are entitled to the technological transfers. As these transfers are non-exclusive, INER has signed the technological transfer contract with one domestic company, and another company is applying for the transfer of the design and development technology of the concentration module early this year. In addition, INER has signed the non-disclosure agreement with 14 domestic companies in the fields of mechanical, electronic, and optoelectronic semiconductor, building up the strategic industrial alliance of the concentration PV system technology.

To speed up the industrialization process of the concentration PV system, INER will establish the qualification laboratory of the concentration solar module this year. The lab is anticipated to obtain a CBTL (Certification Body Testing Laboratory) certificate in 2009, thereby helping local companies obtain international certification to explore the overseas market.