

Science and Technology Prize

Stefan W. Glunz

Fraunhofer Institute for Solar Energy Systems – Germany

“Thin High-Efficiency Silicon Solar Cells”

Stefan W. Glunz is head of Department at the Fraunhofer Institute for Solar Energy Systems of Freiburg. His activity has given a significant contribution to the development of advanced photovoltaic cell structures through the application of novel concepts. High quality silicon based material has been obtained by controlling its electrical features in order to reduce the recombination of charge carriers and by improving the optical quality for increasing the light trapping of long wavelength photons. Moreover advanced metallization technologies, compatible with the manufacturing of thin films and fragile wafers, have been devised and applied .

The achieved results (20,3% efficiency on 99 µm thin multicrystalline wafers of silicon) are internationally acknowledged as the world record . Since they are industrially feasible the impact of the work is becoming very strong on the energy scenario.