Solar Panel Deployable Light Reflector Innovating Construction

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The efficiency of the solar cells, depends on two major parameters: cell temperature and the light intensity falling on it. To solve this problem, the most widespread method is to increase the intensity of the light by placing solar panels in the focal plane of the parabolic reflectors. The model we have made differs from the approved reflectors of parabolic structures with significantly reduced price and simplifies manufacturing technology. The reflector is the construction made of plane mirrors, whose main function is the concentration of the beam fallen around the area of the solar panels. The framework of the solar panel is made of lightweight but very strong double-walled porous polymeric material - carbolux, and the construction itself has the shape of truncated hexahedron pyramid. We would like to point out the innovative cooling system presented in the project which will regulate the temperature of the solar cells and moreover this cooling system provides us with hot water resulted from cooling of the construction. According to the preliminary results of the experimental measurements, the device generates much more electrical energy from same kind of solar cells, than the usual plane constructions of the solar panels which are approved in the world market. Reflector is assembled of individual sectors and it is easy to give the sectors reflective features by means of the silvered polymer membrane which is distinguished by a very low cost and availability on the local market. Its transporting in folded position won't cause any inconvenience and the device will be useful even while hiking and camping. To conclude the device is cheaper and much more efficient than the other approved solar panels on world market.

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