

Categorie Premio Accessibilità Sostenibilità Qualità della vita

Product Name Sphelar® (spherical micro solar cell)

Designer

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Description of innovation social values

- product category
- formal and functional features
- problems solved by innovation
 - user
 - field of application

Kyosemi provides new surface structuring technology through our featured product of Sphelar® to capture sunlight 3 dimensionally, thus improves its power generation capacity to maximum potential. The Sphelar® cell is a spherical solar cell made by using a sphere of crystal silicon, which maximizes raw material use. It offers superior efficiency over traditional cells which have only one planar surface to capitalize upon sunlight.

The Sphelar® cells have high pliability to fit in various types of module such as see-through, flexible, irregular shape, etc. Many applications of semi-transparent solar cell can be envisaged, e.g. sound barriers, building facades, and lucent power-producing window. These applications allow the harvest of most of the global radiation that has direct, reflected and diffused components.

Sphelar® module is not just a power producing element, but a multifunctional buiding element. Sphelar® technology will make possible a reduction of the building's net energy consumption, an improvement of the indoor confort and an enhancement of the facade aesthetics.

As is well known, fossil energy will be exhausted before long. Global warming is a concern around the world. Sphelar® technology will offer a potential decisive element to achieve environmental and economic sustainability.

Description of technical features

- operations
- technology

The features of our technology is

- Spherical, 1-2 mm ϕ , maximizes raw silicon material use, light and durable, reusable
- Absorb sunlight from all directions, no tracking mechanism necessary
- Flexibility in the layout of the cells, any combination of serial and/or parallel connections
- High pliability to fit in various types of module such as see-through, flexible, irregular shape etc.
- Aesthetically very pleasing/intriguing, light and durable
- Tolerant of fault and partial shadowing (series-parallel array)

Dimensions

The Sphelar® cell is a spherical solar cell 1-2 mm in diameter. It has high pliability to fit in various types of module such as see-through, flexible, irregular shape, etc.

Materials

The Sphelar® cell is a spherical solar cell made by using a sphere of crystal silicon, which maximizes raw material use.

Certifications

Benefits for environment

Solar energy is astonishing and freely available. There is direct, reflected and diffused light that is surrounding us. The Sphelar® technology can maximize solar energy harvest to obtain sustainable energies.

Benefits for human being

Sphelar® technology will offer a potential decisive element to chandge current consumption-intensive life-style and achieve environmental and economic sustainability.