Journal of Nuclear Energy & Power Generation Technologies
vol. 6 (2022), Article ID 100016, 1-2 page
doi:10.11131/JNEPGT-22/1000016

AgiAl Publishing House
http://www.agialpress.com/

Commentary

Automatic Solar Tracking System and their types

M. Melville*

Department of Nuclear Physics, Oregon State University, Corvallis, USA

Corresponding Author
M. Melville
markmelville@gmail.com

Editor
Linxiao Qiang

Dates
Received: 25-Nov-2022, Manuscript No. JNEPGT-22-79707; Editor assigned: 28-Nov-2022, Pre-QC No. JNEPGT-22-79707 (PQ); Reviewed: 12-Dec -2022, QC No. JNEPGT-22-79707; Revised: 19-Dec-2022, Manuscript No. JNEPGT-22-79707 (R); Published: 26-Dec2022, Doi: 10.11131/JNEPGT-22/1000016

Description

Solar tracking system allows us to generate a large amount of electricity, greatly increasing the solar panels' effectiveness. Its effectiveness is due to the solar panel's perpendicular relationship to the sun's beams. It can take on many different forms, such as heat energy, electrical energy, chemical energy, nuclear energy, light energy, and so on. Energy use and social development are directly related; nations with higher energy consumption have advanced to a higher stage. Both heat and light are produced by the sun, which is a source of solar energy. It may be converted into electricity using solar cells and is a readily available, sustainable energy source. It is also referred to as PV cells or solar cells.

Photovoltaic cells purge the atmosphere of impurities by converting sunlight directly into power. The production of electricity from solar trackers can be increased by roughly 40% when compared to fixed modules. Compared to a tracking device with a 180 degree rotational range, this has significant advantages. The two basic types of tracking algorithms are astronomical algorithms and real-time light intensity algorithms. An astronomical algorithm is a type of computer program that controls the motors that spin the panels at a particular angle. However, the real-time light intensity algorithm is based on real-time measurements of the light intensity.

Tracker mount: The solar panel is fixed to a tracker mount, which has a skeletal design that enables the solar panel's proper tilt.

Drives: Drives are used to control the motor shaft's load-dependent rotation. In order to detect significant parameters stimulated by the sun and to manipulate them in the controller so that output is created, sensors and sensor controllers are used.

Motor and Motor Controller: A motor converts electrical energy into mechanical energy. The amount of current that should be given to the motor and microcontroller is determined by a motor controller.

The "Automatic Solar Tracking System" is designed to use the most solar energy possible and transform it into different forms of production. The primary goal of this project is to create a system that is easily accessible and performs at its best overall in terms of accessibility and functionality. The development of technology has surpassed foster methods for using this energy for its own beneficial use. Be it for fuel generation, power, thermal energy, or any other reason. In order to convert the sun energy that the earth has taken as its own into electricity, photovoltaic or Concentrated Solar Power (CSP) devices are used.

Through the use of photovoltaic arrays, a directed framework of photovoltaic/solar cells, solar tracking devices make use of this stolen solar energy. Silicon crystals are used to create solar cells. It is the component of a solar cell that is most frequently employed. The solar cell has been very effective and inexpensive in its usage of silicon. To create solar cells, two varieties of crystalline silicon can be employed. Although solar panels can be used to absorb or collect solar energy, their effectiveness is restricted to specific times of day and sunlight that is shining directly on them, that is, at an orthogonal angle to the panel.

At other times of the day, however, the sun's beams are at a different angle, thus much less solar energy is absorbed. This mechanism of the solar tracking systems divides itself into the single axis tracker and dual axis tracker categories. For small-scale photovoltaic power plants, single axis tracking might be seen as one of the most practical systems or a top solution. The horizontal and vertical directions were followed by dual axis trackers. It usually moves in accordance with UN directives, capturing the most solar energy possible.