A novel Sun tracking technique through a Solar PV Tree and a smart controller

Farhan Hyder[a]; Prashant Baredar[a]; [b]K. Sudhakar
[a] Maulana Azad National Institute of Technology Bhopal, India
[b] Faculty of Mechanical Engineering Universiti Malaysia Pahang Pahang, Malaysia

ABSTRACT
Climate change due to global warming and ozone layer depletion have prompted the world to focus its attention towards renewable energy and sustainable development. This have resulted in solar PV systems being considered as a promising source of energy owing to its direct conversion of Sunlight into electricity, ease of use and clean energy production. However, the flat panel land based PV systems consumes large amounts of useful land. A solar PV Tree only uses a fraction of that land for the same amount of energy generation. It is also more effective in Sunlight capture than a land based system. This paper presents the concept of a solar PV tree, its components, working and features. The article also discusses the inherent drawbacks of this technique and suggests a method to overcome them. Finally, the concept of Sun tracking through a solar PV tree with the help of a smart controller is explained.

KEYWORDS:
Solar PV tree (SPT); Solar PV system (SPV);Sun tracking; Smart controller (SC); No moving parts