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Abstract:

The demand of energy of this modern world is rising at a steep rate. The demand can increase by 70% by 2040. To cover up this huge energy demand renewable sources have become more popular around all over the world. Nowadays, research and development works are mainly focusing on new technology to overcome global demand of energy. Renewable energy sources have become a popular source of energy. It is good for the people and for the planet. Now it is the fastest growing source of energy in the world. Renewable energy emits no greenhouse gases and no air pollution. Which is good for the climate and people.

In this 21st century the utilization of solar energy is using in numerous works and projects. Presently in agriculture there are no utilization distinctive of innovation like ploughing tractor, ploughing machine run via solar energy, which reduce time and labor of a farmer. A solar charged ploughing machine has low equipment cost as there is no need of fuel cost. The people of the world are increasing and for that reason food requirement is also high. To meet the amount, we need some newest technology machine in agriculture, which can reduce manpower and can plough within a short time. Solar charged ploughing machine can be a solution with a high efficiency. As it has low maintenance and free source of energy it is very much cost effective than other conventional methods. To obtain solar energy using solar PV panel an efficiency of 18-20% can be achieved. The MPPT controller can help obtain the maximum power from the panel. MPPT can extract more current and charge the battery when the battery is deeply discharged if the state of charge in the battery is lower.

Combining all advanced methods and technologies it is possible to come up with an environment and user-friendly ploughing machine. A ploughing machine is designed and implemented through solar panel and MPPT controller which will be powered up with a PMDC motor integrated with ploughing blades connected to the shaft. The addition of MPPT controller will allow the machine to obtain maximum power from the PV panel.