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| **Abstract:** |  |
| The purpose of the paper is to design a Solar PV Operated E-Power tiller for agriculture use. The design of an electrically driven Solar PV Operated E-Power tiller has three primary purposes, the first of which is to reduce the quantity of fuel used; the second of which is to maintain a pollution-free environment, and the third of which is to avoid a price increase. The results of this study will also help in the development of a prototype for a portable charging station, which will be put to use in order to keep the tractor's battery charged. In order to carry out this project, two brushless DC (BLDC) motors, each of which has 1.34 horsepower, were used. A lithium-ion battery served as the only source of power for the motors. In full running condition, the battery can provide backup for up to 5 hours. The speed of the shaft on the power tiller cultivator is 339.23 rpm. This system is equipped with the necessary brakes, steering controls, and controls for the pace at which the cultivator blades rotate. Both the structural design of this and the simulation of the system were done in MATLAB Simulink. Solidworks was used for the structural design. The system functioned without any issues, and the information that was gathered fell within the parameters of what was considered to be acceptable in relation to the standards that had been established. | |