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Development of One-Axis Didactic Solar Tracker for Photovoltaic Panels

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Abstract : In recent years, solar energy has established itself as one of the main sources of renewable energy, gaining a large space in electricity generation around the world. However, due to the low performance of photovoltaic panels, technologies need to be sought to maximize the production of electricity. In this regard, the present study aims to develop a prototype of solar tracker for didactics applications, controlled with the Arduino® platform, that enables the movement of photovoltaic plates in relation to the sun positions throughout the day through an electromechanical system, optimizing, thus, the efficiency of solar photovoltaic generation and improvements for the photovoltaic effect. The solar tracking technology developed in this work was presented of the shape oral and practical in two middle schools in the municipality of Mossoró/RN, being one of the public network and other of the private network, always keeping the average age of the students, in the case, around 16 years, contemplating an average of 60 students in each of the visits. Thus, it is concluded that the present study contributed substantially to the dissemination of knowledge concerning the photovoltaic solar generation, as well as the study of solar trackers, thus arousing the interest and curiosity of the students regarding the thematic approached.

Keywords : alternative energy, solar tracker, energy efficiency, photovoltaic panels
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