

## ABSTRACT

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The global energy production it is changing, leading the way for clean energy. In this scenario, individual generations with more than one source stand out, called hybrid systems. These systems can be used to feed complete plants in isolation or connected to the transmission line. In this context, this work presents the development of a simulator for an isolated solar-wind microgeneration system, with the application of search algorithms to define the point of maximum operating power. The system includes an inverter to allow the supply of alternating current loads and an energy storage element. Energy sources, voltage converters and search systems for the maximum power point are modeled. Results of the application of four search algorithms are presented, namely: Disturb and Observe (P&O), Incremental Conductance (CI), Fuzzy Logic and Artificial Neural Networks (RNA) based on real data collected at the INMET weather station, located in Arraial do Cabo, in Rio de Janeiro.

Keywords: Micro-generation of energy; Renewable energy; Isolated production; Hybrid system; MPPT.