

Grid-Free Solar Power system

INDUSTRY CONTACT:

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BACKGROUND:

Miratec is a Canadian company with a comprehensive line of molded assemblies, cables and inverters. They also offer customized solutions to companies by leveraging their expertise in wiring harnesses, custom cable assemblies, control panel integration, injection molding of connectors and electronics. For the wind and solar energy industries, Miratec designs and builds electromechanical, back panels wiring and enclosures. As part of this project, they wanted to establish a niche in the marketplace and develop a weather-proof grid-free solar power system with wireless monitoring.

DURHAM COLLEGE STUDENTS AND FACULTY:

- Constructed and tested the solar panel assembly.
- Modeled a weather-proof enclosure to house the voltage-regulating circuits and batteries.
- Attached wireless devices for telemetry and remote monitoring.

OUTCOME:

The designs were developed and tested for a grid-free solar power system comprised of a solar panel mounted on a pole. The voltage generated is transmitted down to a weather-proof enclosure that houses the electronics to regulate the voltage and charge deep-cycle batteries. The entire system is easily assembled and disassembled, thereby reducing the cost compared to systems presently available in the market. These pre-packaged solar electric systems are ideal for remote locations and applications such as radio, security camera, telemetry or lighting where normal power is not readily available.

NATURAL SCIENCES AND ENGINEERING RESEARCH COUNCIL OF CANADA (NSERC):

NSERC aims to make Canada a country of discoverers and innovators for the benefit of all Canadians. The agency supports students in their advanced studies, promotes and supports discovery research and fosters innovation by encouraging Canadian companies to participate and invest in post-secondary research projects. NSERC researchers are on the vanguard of science, building on Canada's long tradition of scientific excellence.

NSERC'S GOALS:

- 1. Advancing knowledge, seizing opportunities:**
Fuel the advancement of knowledge in science and engineering and ensure that Canadian scientists and engineers are leaders and key players in a global knowledge community.
- 2. Building prosperity through research:**
Connect and apply the strength of the academic research system to address the opportunities and challenges of building prosperity for Canada.

3. Inspiring the next generation:

Ensure that Canadian youth are exposed to activities that capture their imagination and generate curiosity and excitement about science, mathematics and technology.

4. Showing the value of research and development investments:

Demonstrate NSERC's accountability and how the results of its investments in Canadian research and training benefit Canadians.

5. Increasing visibility of research:

Celebrate the accomplishments of Canadian natural sciences and engineering researchers and institutions, and increase their visibility in Canada and worldwide.

FOR MORE INFORMATION, PLEASE CONTACT:

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