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June 14, 2021

**Subject: Endorsement of Solar Cell/panel Technology offered by IdealPV**

To whom it may concern,

I am pleased to write this letter of endorsement in support of the solar cell/panel technology offered by **IdealPV**. I have been working on problems related to semiconductors for the past 40+ years. During the last 20 years, my research group has been collaborating with the National Renewable Energy Laboratory in Golden, Colorado. Silicon solar cell technology has been the focus of this activity.

Recently, I was invited to review and assess the IdealPV Solar Panel technology. I note that IdealPV's patented solar panel technology is based on the fundamental discovery of the Law of Forward Only Zero Hot Spots.

In particular, IdealPV Solar Panel technology addresses the problems that are associated with reverse bias in solar cells. This phenomenon is associated with the negative voltage bias that leads to the flow of reverse current across the junction in a cell, resulting in failure of the cell and subsequently, the panel.

In real-world solar cells, defects, dislocations and microcracks are present; they lead to thermally induced degradation in device and panel performance. This degradation in panel performance can be in excess of 20% during the course of five years. IdealPV has been able to overcome this device, panel and system limitation by incorporating its patented Forward Only Zero Hot Spot technology.

In utilizing this disruptive technology in the manufacture of silicon solar cell panels, IdealPV, in collaboration with CHERP, is rapidly advancing the deployment of its cost effective and highly reliable solar cell technology for daily use in domestic and industrial applications of this excellent source of renewable energy.

Sincerely,

A handwritten signature in blue ink, appearing to read 'N.M. Ravindra', is written over a light blue grid background.

Dr. N M Ravindra  
Professor of Physics