



# Solar Panel Monitor System

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2nd Annual UCF - Progress Energy  
Symposium in Renewable &  
Sustainable Energy  
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Department of Electrical Engineering and Computer Science





## Members

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- Benjamin Brindle - EE
- Devin McLean - CpE
- Robert Parrish - EE

# Purpose

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- Provide a low cost means to monitor solar panels wirelessly through the World Wide Web that will cut cost in maintenance and installation





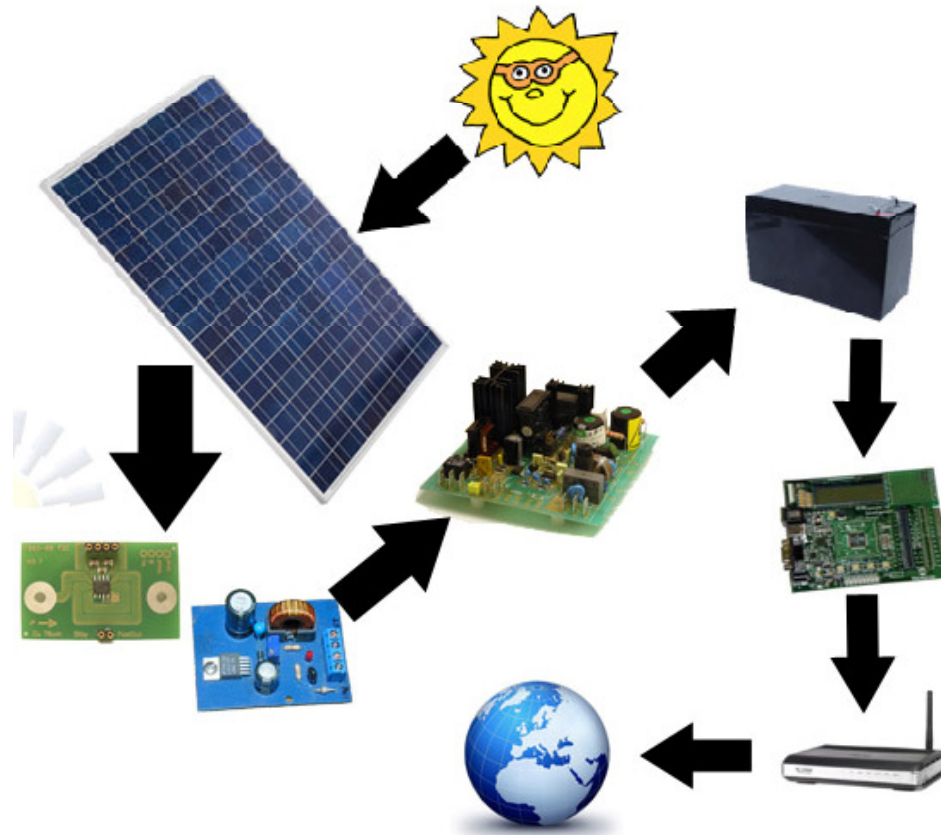
# Project Goals

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- Monitor solar panels and transmit wirelessly up to a distance of ¼ mile
- Feed information to the Internet
- Be powered by the solar panels (1 AH)
- Be able to sustain power through nighttime and weather (12 hours of battery backup)
- Cut costs in maintenance of solar panels due to guesswork (~\$2,000)

# Project Outline

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# Cost

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Item	Cost
Hall Effect Current Sensor	\$5.28
Wireless Transceiver	\$29.40
PIC24 Microcontroller	\$6.78
Battery Charge Controller	\$14.21
Buck Boost Power Converter	\$19.07
Battery	\$50
Base Station	\$40

Total Cost: \$164.74



# Return of Investment

- With remote and wireless monitoring, solar panel problems can be prevented before costly maintenance
- Maintenance costs about \$2,000 per residential installment
- $\text{ROI} = (\$2,000 - \$164.74) / \$164.74 = 11.14$
- Therefore, ROI = 1114% return





# The End

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