

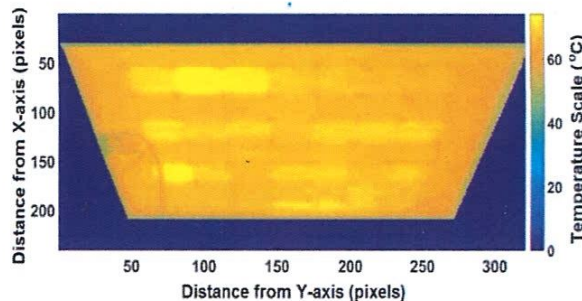


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National Centre for Photovoltaic Research and Education
A Project of the Ministry of New and Renewable Energy at IIT Bombay

NCPRE Researchers bag 'Best Paper Award' at International Workshop

NCPRE Researchers **received the Best Poster Award** at the Photovoltaic Reliability Workshop held in Lakewood, Colorado, USA in February, 2017. Their paper, entitled "Correlating Infra-red Thermography with Electrical Degradation of Modules inspected in All India Survey of Photovoltaic Module Reliability 2016" described a new rapid technique to find temperature distribution over the module, thereby identifying hot spots and other temperature inhomogeneities. These cause cell-to-cell mismatch and result in a loss of module power output. Such The paper attracted a lot of attention at the Workshop from all international participants.



The automated temperature mapping software described in the paper allows rapid identification of module hot spots

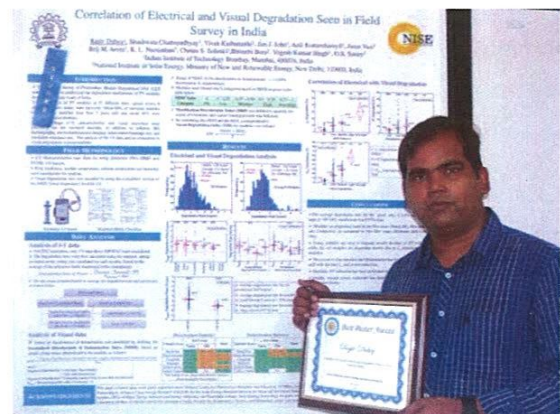
The work in this award-winning paper was part of the exhaustive study that NCPRE has undertaken (jointly with NISE) of the durability and reliability of PV modules installed in the field in India. The NCPRE and NISE teams have conducted the **influential 'All-India Surveys of Photovoltaic Reliability' in 2013, 2014 and 2016**. Detailed reports on the Surveys are available from the NCPRE website at www.ncpre.iitb.ac.in. **These surveys represent one of the most comprehensive large-scale exercises undertaken anywhere in the world, and have been receiving significant attention in India and globally.** The Surveys identify the degradation which occurs in different climatic zones of India, for modules of different technologies and whether the installation is roof-mounted or ground-mounted. These surveys have given an excellent understanding of the durability of PV modules in India, which can guide future installations under the National Solar Mission. **This work of NCPRE is unique in that it has generated a lot of practical data, as well as internationally acclaimed research.**



Four research staff members of NCPRE who were co-authors of the award winning paper at the PV Reliability Workshop

The All-India Surveys will be continued by NCPRE in 2018 and 2020. Each survey covers about 1000 modules in 40 sites spread over all 6 climatic zones of India. The survey team travels over 18,000 km from Ladakh to the southern tip of Kerala to access the modules.

This is the third international 'best poster' award that the NCPRE team has won during the last year. The other two poster papers (jointly with NISE) which won awards were "Correlation of Electrical and Visual Degradation seen in Field Survey in India" at the prestigious IEEE Photovoltaic Specialists Conference in Portland, Oregon, USA in June 2016, and "Effect of Hot Cells on Electrical Degradation of PV Modules" at the Photovoltaic Reliability Workshop held in Lakewood, Colorado, USA in February, 2016.



NCPRE student with the award in front of his award winning paper at the IEEE PVSC in 2016