Brief Biodata

Name: Dr. Prathap Pathi

Designation:	Principal Scientist	
DP No. and Name:	4.01 – PV Metrology	
DU No. and Name:	4 – Advanced Materials and Device Metrology	
Email:	prathap@nplindia.org	
Date of Joining CSIR-NPL:	11.11.2011	
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Research Area/ Interest

PV Metrology, Silicon solar cell fabrication and its reliability

Educational Qualifications

(Please write latest qualification first)

Degree	Subject	University/ Institute	Year
Ph.D	Physics	Sri Venkateswara University, Tirupati	2003-07
M. Sc.,	Physics	Sri Venkateswara University, Tirupati	2001-03
B.Sc.,	Mathematics, Physics & Chemistry	Sri Krishnadevaraya University, Anantapur	1998-01

Academic / Research Experience

Grade / Post	Institute	Duration		Research Field
		From	To	
Principal Scientist	CSIR-National Physical Laboratory, New Delhi	11.11.2019	Till date	PV Metrology, Solar cell fabrication and its reliability
Senior Scientist	CSIR-National Physical Laboratory, New Delhi	11.11.2015	10.11.2019	Development of silicon solar cells and their reliability
Scientist	CSIR-National Physical Laboratory, New Delhi	11.11.2011	10.11.2015	Development of unit processes for silicon solar cells
Process Scientist	CNRS-InESS, Strasbourg, France	01.01.2010	10.11.2011	Laser processing of silicon solar cells
Research Scientist	CNRS-InESS, Strasbourg, France	15.05.2008	31.12.2010	Development of wafer equivalent thin film crystalline silicon solar cells

No. of Publications

No. of Publications in SCI Journals	No. of Publications in non-SCI Journals	No. of Publications in Conference Proceedings	Books	Total
55	NIL	25	5	85

Selected Publications

1. R. K Sharma, A. Srivastava, P. Kumari, D. Sharma, JS Tawale, V.V. Agrawal, B.P. Singh, **P. Prathap,** S.K. Srivastava, Graphene Oxide Modified PEDOT: PSS as an Efficient Hole Transport Layer for Enhanced Performance of Hybrid Silicon Solar Cells, Surfaces and Interfaces, 36 (2023) 102577K.
2. Estimation of potential induced degradation in solar Mini-modules, V Kumari, N Kumar, KMK Sriv-atsa, RP Aloysius, SK Srivastava C.M.S Rauthan, **P. Prathap**, Materials Today: Proceedings, 30 (2020) 229-233
3. Effect of balanced and unbalanced magnetron sputtering processes on the properties of SnO_2 thin films, G. Shanker, **P Prathap,** KMK Srivatsa, P. Singh, Current Applied Physics, 19 (2019) 697-703
4. Nano-photonic structures for light trapping in ultra-thin crystalline silicon solar cells, **P. Prathap,** A. Peer and R. Biswas, Nanomaterials 7 (2017) 17 (16 pages)
5. Effect of low thermal budget annealing on surface passivation of silicon by ALD based aluminum oxide films, Vandana, N. Batra, J. Gope, J. Panigrahi , S. Tyagi, **P. Pathi,** SK Srivastava, C.M.S Rauthan, P.K. Singh, Phys. Chem. Chem. Phys., 16 (2014) 21804

Patents

1 Granted: 03
1. European patent: EP3381058B1, 2020
2. US patent: US10811546B2, 2020 and
3. Indian Patent: 386181, 2022 (Appl. No. 3817DEL2015)

Current Activities

(Not more than 100 words)

Currently, working on establishment of "National Primary Standard Facility for Solar Cell Calibration" to contribute to the ambitious programme of National Solar Energy Mission, Govt. of India.
Also, working on fabrication silicon solar cells and related materials for improving reliability of the cells against degradation effects of solar cells such as potential induced degradation (PID), light induced degradation (LID) utilizing the high-efficiency structures.

Honour(s)/Award(s)/ Fellowship(s)

2022	Guest Scientist, Physikalisch Tecchnisch Bundesanstalt (PTB), Germany (4 months)
2014	Bhaskara Advanced Solar Energy (BASE) Fellowship sponsored from IUSSTF (Indo-US Science and Technology Forum) and Department of Science & Technology, Govt. of India (6 months)

Contributions to AcSIR

Guiding Masters and Doctoral students
Master theses: 11
Doctoral theses: 2 (Guide), 2 (Co-guide)

Membership of Professional Societies/ Institutions

European Materials Research Society
American Chemical Society

Any other Information

(Not more than 100 words)

- Contributing to the National solar Mission by setting up the facility, "National Primary Standard for Solar Cell Calibration". This is expected to improve the solar photovoltaic quality infrastructure (PV-QI) in the country.
- Past students (Masters/Doctoral) are working in internationally reputed laboratories
- Developing indigenous facilities for assessing the reliability of solar cells