Curriculum Vitae

Dr. Om Prakash

Date of Birth: 15/02/1987
Marital Status: Married

Correspondence Address:
P.G. Department of Physics
Khalsa College Amritsar
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Higher Education:

Doctor of Philosophy Field: Solar Photovoltaic Year of Completion: 23th August. 2020.

Institute: Guru Nanak Dev University, Amritsar, Punjab, India.

Dissertation: "Transition Metal Oxide Based Blocking Layers For Fabrication of Efficient Dye Sensitized Solar Cells".

Education:

- **Bachelor of Science (B.Sc.)** (2006-2009), Himachal Pradesh University, Shimla, India.
- **Master of Science (M.Sc.)** (2009-2011), Department of Physics Guru Nanak Dev University, Amritsar, India.
- **Doctor of Philosophy, (Ph.D.)** (13th August 2020), Department of Physics Guru Nanak Dev University, Amritsar, India.

Work Experiences:

- **Assistant Professor (Part Time Basis)** (Aug. 2013- May 2014), Department of Physics, Guru Nanak Dev University College, Chungh (Tarn Taran), India.
- **Assistant Professor (Adhoc Basis)** (July 2014- Dec. 2014), Department of Physics, DAV College Amritsar, India.
- **Research Experience** (25^{th} July, 2016- 24^{th} July 2017), Bhabha Atomic Research Centre, Trombay, Mumbai, India.
- **Assistant Professor (Adhoc Basis)** (2^{nd} April 2021, present), P.G. Department of Physics, Khalsa College, Amritsar, India.

Publications:

- Low temperature processable ultra-thin WO_3 Langmuir-Blodgett film as excellent hole blocking layer for enhanced performance in dye-sensitized solar cell. **Om Prakash**, Vibha Saxena, Sipra Choudhury, Tanvi, Ajay Singh, A.K. Debnath, A. Mahajan, K.P. Muthe, D.K. Aswal, **Electrochimica Acta**, 318, (2019), 405-412. (**I.F. = 6.9**)

- Improved performance of dye sensitized solar cell via fine tuning of ultrathin compact TiO_2 layer. Tanvi, Vibha Saxena, Ajay Singh, **Om Prakash**, A. Mahajan, A.K. Debnath, K.P. Muthe, S.C. Gadkari, **Solar Energy Materials and Solar Cells**, 170, (2017), 127–136. (**I.F. = 7.26**)

- Solution processable transition metal oxide ultra-thin films as alternative electron transport and hole blocking layers in dye sensitized solar cells. **Om Prakash**, Vibha Saxena, R. K. Bedi, A.K. Debnath, Aman Mahajan, **Journal of Photochemistry and Photobiology A: Chemistry)**, 418, (2021), 113385. **(I.F. = 4.29)**.

- Growth of Few Layered Molybdenum Disulphide, **Om Prakash**, Aman Mahajan, R. K. Bedi and Vibha Saxena, , AIP Conf. Proc. 2115, (2019), 030616.

- ❖ Tungsten Disulfide Nanoparticles Anchored on Reduced Graphene Oxide for Dye Sensitized Solar Cell Applications, Sanjeev Kumar, **Om Prakash,** Aman Mahajan, and Vibha Saxena, AIP Conf. Proc. 1942, (2018), 050101.

Conferences/Workshops:

- ☞ Paper entitled "Growth of Few Layered Molybdenum Disulphide." has been presented in DAE-SSPS (2018), held at Guru Jambheshwar University of Science & Technology, Hisar, Haryana, India, during 18^{th} – 22^{th} December 2018.
- ☞ Paper entitled "Tungsten Disulfide Nanoparticles Anchored on Reduced Graphene Oxide for Dye Sensitized Solar Cell Applications." has been presented in DAE-SSPS (2017), held at Bhabha Atomic Research Center, Mumbai, India, during 26^{th} – 30^{th} December 2017.
- ☞ Paper entitled "Synthesis and characterization of MoS_2 few layered films." has been presented in ''International conference on thin films (ICTF 2017)'', held at CSIR-National Physical Laboratory, New Delhi, India, during 13^{th} – 17^{th} November 2017.
- ☞ Paper entitled "optimization of scattering enhancement by varying the morphology of photoanode in dye-sensitized solar cells." has been presented in ''International Photovoltaic Solar Energy Conference (IPSEC) SOLAR ASIA-2015'', held at Department of Physics, Savitrabai Phule Pune University, Pune, India, during 30^{th} July – 1^{st} August 2015.
- ☞ Pre-conference workshop on "Thin Film Solar Cells", held at CSIR-National Physical Laboratory, New Delhi, India, during 13^{th} November 2017.
- ☞ National workshop on "Radiochemistry & Applications of Radioisotopes", conducted jointly by "DAE-BRNS, Indian Association of Nuclear Chemists and Allied Scientists (IANCAS), held at P.G. Department of Physics, KHALSA COLLEGE AMRITSAR, during May, 2-6, 2022.

Achievements:

- ✌ Qualified "**Graduate Aptitude Test in Engineering**" **(GATE), in Physics**

  GATE-2016, Organized by Indian Institute of Science, Bangalore **(IISc), India.**

  GATE-2019, Organized by Indian Institute of Technology **(IIT), Madras, Chennai, India.**

Leadership and Management Role:

- ☞ Guided Master of Sciences (M.Sc.) students in their dissertations
- ☞ Demonstration of the instruments to the visiting students.
- ☞ Lab Management including purchase and maintenance of the instruments, dealing with service engineers for installations and servicing.

Reviewer of International Journal and Conferences:

- Materials Today: Proceedings

Skills and Expertise's:

Instruments:

Synthesis and operating method:

Spin Coater
Langmuir-Blodgett System for thin film deposition
Chemical Vapor Deposition (CVD)
Physical Vapor Deposition (PVD)
Electron Beam Systems (e-beam)
Hydrothermal method
Glove Box

Characterization Techniques:

UV Visible spectroscopy, X-rays Diffractometer, Raman spectroscopy, Field emission scanning electron microscopy (FESEM), HR-TEM (JEOL JEM 2100), Photoluminescence spectrophotometer, AUTOLAB Galvanostat/Potentiostat System, UV-Ozone Cleaner, Solar Simulator, Keithley Source Meter.