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Sanjay Ghosh, MSc, NET, SET, PhD-University of Pune, India, Postdoc-University of St Andrews, UK.

EDUCATION

Jul 2008 – Jun 2013 **SavirtibaiPhule Pune University**
PhD, Physics (Organic Photovoltaics)
Pune, India
Thesis: **On morphology Control in bulk-heterojunction for polymer based solar cells**

Jul 1999 – Jun 2001 **SantGadge Baba Amravati University**
MSc, Physics,
Amravati, India

RESEARCH EXPERIENCE

Feb 2005 – present **Associate Professor (present post)**
North Maharashtra University, Physics
Jalgaon, India

Jan 2014 – Dec 2014 **Postdoctoral Research Fellow (group of Prof. Ifor D. W. Samuel)**
University of St. Andrews, Physics and Astronomy
St. Andrews, United Kingdom

Jul 2008 – Jun 2013 **Ph. D. Research Scholar**
University of Pune, School of Energy Studies, Department of Physics
Pune, India

Research Interest **Organic Photovoltaics(OPV), Organic Light Emitting Diode(OLED), Perovskite Solar Cell**

TEACHING EXPERIENCE

Feb 2005 – present	**Associate Professor (present post)** Department of Physics, North Maharashtra University Jalgaon, India
Dec 2004 – Feb 2005	**Assistant Professor** Department of Physics, VidnyanMahavidyalaya Malkapur, India
Aug 2005 – Dec 2005	**Assistant Professor** Department of Physics, VidyabharatiMahavidyalaya Amravati, India

PROFESSIONAL AFFILIATIONS

- Life member of Indian Physics Association (IPA)
- Life member of India Association of Physics (IAP)
- Editorial board member of Journal: International Journal of Scientific Research in Knowledge, Malaysia (ISSN: 2322- 4541)

AWARDS AND ACHIEVEMENTS

2017-18	Research grant award by KBCNMU, Jalgaon, India.
Jan 2014	One year Study Leave from North Maharashtra University for postdoctoral research at the University of St. Andrews, UK.
Jan 2014 toDec 2014	Worked as a postdoctoral research fellow on EPSRC funded international project at the University of St. Andrews, UK.
Dec 2003	Qualified National Eligibility Test (NET) for Lectureship in Physics.
Mar 2004	Qualified State Eligibility Test (SET) for lectureship in Physics (Maharashtra and Goa).
Feb 2003	Qualified Graduate Aptitude Test for Engineers (GATE).
Feb 2001	Qualified Joint Entrance Screening Test (JEST).
Nov 2011	1st prize in the University Level Research Festival 'Avishkar' in the teacher's category held at North Maharashtra University, Jalgaon.

PUBLICATION HIGHLIGHTS (Total Publications – 28)

1. Sagar A. More, Rajendra G. Halor, Raees Shaikh, Gauri G. Bisen, Hemant S. Tarkas, Swapnil R. Tak, Bharat R. Bade, Sandesh R. Jadkar, Jaydeep V. Sali and **Sanjay S. Ghosh**, *Investigating the effect of solvent vapours on crystallinity, phase, and optical, morphological and structural properties of organolead halide perovskite films*, RSC Adv., 10, 39995–40004 **(2020)**, IF-3.36, 2046-2069.
2. Sagar A. More , Rajendra Halor, Shaikh Raees and **Sanjay S. Ghosh**, *A comparative study of two-step and three-step methods for coating organometallic lead halide perovskite thin films*, JOURNAL OF MATERIALS SCIENCE: MATERIALS IN ELECTRONICS, **31**, 17995–18003 **(2020)**, IF-2.478, 1573-482X.
3. R. A. Gani Shaikh, S. A. More, G. G. Bisen and **S. S. Ghosh**, *Study the Properties of Solution Processable CZTS Thin Films Induced by Annealing Treatment: Study of Annealing Time*, SEMICONDUCTORS, 54 (9), 1011-1015 **(2020)**, IF-0.674, 1090-6479.
4. S. Tak, H. Tarkas, G. Bisen, **S. Ghosh**, J. V. Sali, *A new approach for preparation of ternary bulk-heterojunction using dual-feed ultrasonic spray for organic solar cells*, OPTICAL MATERIALS, 91, 296, **(2019)**. IF- 3.06, 0925-3467
5. R. A. G . Shaikh, S. A. More, G. G. Bisen, S. R. Jadkar, J. V. Sali, **S. S. Ghosh**, *Effect of thermal annealing and cooling rate on CBD grown thin films*, JOURNAL OF MATERIALS SCIENCE: MATERIALS IN ELECTRONICS, https://doi.org/10.1007/s10854-019-02238-4 **(2019)** IF-2.478, 1573-482X.
6. G. Conboy,R. G. D. Taylor, N. J. Findlay,A. L. Kanibolotsky,A. R. Inigo, **S. S. Ghosh**, B.Ebenhoch,L. K.Jagadamma, G. K. V. V. Thalluri,M. T. Sajjad,I. D. W. Samuel and P. J. Skabara, *Novel 4,8-benzobisthiazole copolymers andtheir field-effect transistor and photovoltaic applications*, JOURNAL OF MATERIALS CHEMISTRY C,5, 11927**(2017),** IF-7.059, 2050-7534.
7. Eli Zysman-Colman, **Sanjay S. Ghosh**, Guohua Xie,Shinto Varghese, Mithun Chowdhury, Nidhi Sharma, David B. Cordes, Alexandra M. Z. Slawin, and Ifor D. W. Samuel; *Solution-Processable Silicon Phthalocyanines in Electroluminescent and Photovoltaic Devices;* ACS APPLIED MATERIALS AND INTERFACES, 8, 9247**(2016), IF-9.229,** 1944-8252.
8. **Sanjay S Ghosh**,Luis A. Serrano, Bernd Ebenhoch, Vincent M. Rotello Graeme Cooke Ifor D. W. Samuel; *Organic solar cells based on acceptor-functionalized diketopyrrolopyrrole derivatives;* JOURNAL OF PHOTONICS FOR ENERGY; 5, 057215 **(2015),** IF- 1.836, 1947-7988.
9. Shuyu Zhang,DobroslavTsonev, Stefan Videv, **Sanjay Ghosh**, Graham A.Turnbull, IforD. W. Samuel and Harald Haas;*Organic solar cells as high-speed data detectors for visible light communictions;*OPTICA;*2(7); 607***(2015). IF-** 9.778, 2334-2536.

10. Mrunal S Mahajan, Ganesh S Lonkar, **Sanjay S Ghosh**, Mahendra B Patil, Dipak S Dalal, Jaydeep V Sali: *Formation of P3KHT:PCBM bulk-heterojunction using orthogonal solvents by ultrasonic spray method;*JOURNAL OF PHYSICS D: APPLIED PHYSICS;*; 48; 265105****(2015).*** **IF-3.207,** 1361-6463.
11. Adam F. Henwood, Yue Hu, Muhammad T. Sajjad,Gopala K. V. V. Thalluri,**Sanjay S. Ghosh**,David B. Cordes, Alexandra M. Z. Slawin, Ifor D. W. Samuel,Neil Robertson, and Eli Zysman-Colman; *Unprecedented Strong Panchromic Absorption from Proton-Switchable Iridium(III) Azoimidazolate Complexes;* CHEM. EUR. J. 21; 1-9 **(2015),** IF- 5.236, 1521-3765.
12. Mrunal S Mahajan, D. M.Marathe, **Sanjay S Ghosh**, V. Ganesan, Jaydeep V Sali: *Changes in in-plane electrical conductivity of PEDOT:PSS thin films due to electric field induced dipolar reorientation*; RSC ADVANCES; 5; 86393 **(2015)**, IF-3.36, 2046-2069.
13. V.S. Waman, M.M. Kamble, **S.S. Ghosh**, A.H. Mayabadi, B.B. Gabhale, S.R. Rondiya, A.V. Rokade, S.S. Khadtare, V.G. Sathe, H.M. Pathan, S.W. Gosavi, S.R. Jadkar: *Evolution of microstructure and opto-electrical properties in boron doped nc-Si:H films deposited by HW-CVD method*; JOURNAL OF ALLOYS AND COMPOUNDS; 585; 523***(2014)***, IF-5.316, 0925-8388.
14. A. H. Mayabadi, V. S. Waman, M. M. Kamble, S. S. Ghosh, B. B. Gabhale, S. R. Rondiya, A. V. Rokade, S. S. Khadtare, V. G. Sathe, H. M. Pathan, S. W. Gosavi, S. R. Jadkar; *Evolution of structural and optical properties of rutile TiO2 thin films synthesized at room temperature by chemical bath deposition method*; JOURNAL OF PHYSICS AND CHEMISTRY OF SOLIDS; 75, 182 **(2014)**. IF-3.995, 0022-3697.
15. **S. S. Ghosh**, A. P. Zerwal, G. G. Bisen, G. S. Lonkar, J. V. Sali, V. S. Waman, S. R. Jadkar;*Why specific mixed solvent composition leads to appropriate film formation of composite during spin coating?*; APPLIED PHYSICS LETTERS;102; 051918 ***(2013)***, IF-3.791**,** 1077-3118.
16. **S. S. Ghosh**, G. S. Lonakar, M. S. Mahajan, J. V. Sali and S. R. Jadkar, Effect of thermal annealing on P3HT:PCBM blend films; INVERTIS JOURNAL OF RENEWABLE ENERGY; 3, 183 **(2012)**. 2231-3419.
17. **Sanjay S. Ghosh**, Ganesh S. Lonkar, Mrunal S. Mahajan, Sandesh R. Jadkar, Vaishali S. Waman, Mahesh M. Kamble, V. Ganesan, Jaydeep V. Sali: *Bulk-heterojunction morphology control during spin coating: Modelling diffusion assisted phase separation*. APPLIED PHYSICS LETTERS; 101; 173305 **(2012)**. IF-3.791, 1077-3118.
18. Ganesh. S. Lonkar, Mrunal. S. Mahajan, **Sanjay. S. Ghosh**, Jaydeep V. Sali: *Modeling thin film formation by Ultrasonic Spray method: A case of PEDOT: PSS thin films*. ORGANIC ELECTRONICS;13; 2575 **(2012).** IF-3.721, 1566-1199.
19. Vaishali S. Waman, Mahesh M. Kamble, **Sanjay S. Ghosh**, AzamMayabadi, Vasant. G. Sathe, Habib M. Pathan, Shashikant D. Shinde, Kiran P. Adhi, Sandesh R. Jadkar: *Highly*

conducting phosphorous doped n-type nc-Si:H films by HW-CVD for c-Si heterojunction solar cells. RSC ADVANCES; 2; 9873 **(2012).** IF-3.36, 2046-2069.

20. V. S. Waman, M. M. Kamble, S. S. Ghosh, R. R. Hawaldar, D. P. Amalnerkar, V. G. Sathe, S. W. Gosavi, S. R. Jadkar; *Influence of helium dilution of silane on microstructure and opto-electrical properties of hydrogenated nanocrystalline silicon (nc-Si:H) thin films deposited by HW-CVD*; MATERIALS RESEARCH BULLETIN; 47, 3445 **(2012)**. IF-4.641, 0025-5408.

CONFERENCE/PRESENTATIONS (Selected)

1. Invited talk, "Organic and Organic-inorganic hybrid materials for application in solar cells in the International e-Conference on ES Energy and Environment, organized during 27-05-2021 to 30-05-2021.
2. Key note speaker at national seminar "Properties Fabrication and applications of nano-materials and devices" organized by Uka Tarsadia University, Bardoli, "Organic Solar Cells: Principles and Techniques on 5th July 2019.
3. Invited talk as chief guest on "Research in organic solar cell" on the occasion of inauguration of Physics society at the Vidyabharati Mahavidyalaya, Amravati, India on 29 August 2018.
4. Plenary talk "Organic Solar Cells: Materials and Principles", at Second International Conference on Advanced Polymeric Materials (ICAPL 2017), Kottayam, Kerala, India during 7-9 April, 2017.
5. Invited talk "Organic Solar Cells: A bet for future", at Inter University Consortium (IUC), Indore on 26th December 2016.
6. Oral presentation "What happens when diiodooctane is used in small molecule-fullerene organic solar cells?, at 14th International Conference on Electrical and Related Properties of Organic Solids (ERPOS)-2017, St. Andrews, United Kingdom during 9-13th July 2017.
7. Organic photovoltaic meeting at The Burn, Scotland, with collaborators from the University of Glasgow (Prof. Graeme Cooke) and Strathclyde University (Prof. Peter Skabara), June 2014 (Presentation).

PROJECTS

AS PRINCIPAL INVESTIGATOR

1. Title: Synthesis of low cost and environmental friendly organic/inorganic hybrid solar cells and their study.
   Funding agency: University Grants Commission of India (UGC).
   Duration: May 2009 to April 2011, (Amount-1.5 lakh)

Status: COMPLETED

2. Title: Fabrication and study of Perovskite Solar Cells by Ultrasonic Spray Coating Technique with targeted efficiency ~15%: Research and Technology.
   Funding agency: Solar Energy Research Initiative (DERI), DST.
   Duration: 2017 to 2020, (Amount-41 lakh)
   Status: Completed

3. Fabrication and study of low cost solution processed TADF-OLEDs by ultrasonic spray coating method.
   Funding Agency: DAE-BRNS.
   Duration: 2017-2020 (Amount: ≈34 lakh)
   Status: Ongoing.

4. Study of varied stoichiometry organometallic metal halide perovskite materials to improve their stability: Research and Technology
   Funding Agency: UGC-DAE Consortium for Scientific Research.
   Duration: 2018-21 (Extendable) (Amount: ≈1.35 lakh)
   Status: Ongoing.

ORGANIZATION OF CONFERENCES AND WORKSHOPS (Selected)

1. Convener of International Materials Science Conference (e-conference) organized by School of Physical Sciences during the period 18-20 March 2021.
2. Convener of one day national workshop "Characterization Techniques" at the Department of Physics, North Maharashtra University, India on 9 Jan 2015.
3. Co-Convener of one day national workshop "Grid Connected Solar Photovoltaic System in Feb 2014 at the Department of Physics, North Maharashtra University.

SUBJECTS TAUGHT AT POST GRADUATION LEVEL

1. Mathematical methods for Physics,
2. Electromagnetic Theory,
3. Statistical Mechanics,
4. Quantum Mechanics,
5. Semiconductor Physics,
6. Condensed Matter Physics,
7. Characterization Techniques.