

**Dr. Dulen Saikia (HoD)**

**Associate Professor & Chief Investigator**

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**Educational Qualifications**

**M. Sc.:** Physics: Condensed Matter Physics, (Cotton College), Gauhati University, 1995

**M.Phil:** Dibrugarh University, 1997

**Ph. D:** Dibrugarh University, 2014

**Thesis topic** – “Optical and Electronic Investigations of Some Semiconductor Quantum Dots Dispersed in Polymer or Glassy Matrix”

**Other Responsibility of the College:**

1. Teacher Representative to the College Governing Body (2015-1016)
2. Joint Coordinator, IQAC (website and other academic activities)
3. Member, Construction Committee, Sibsagar College.
4. Executive member, Sibsagar College Science Society
5. Executive member, Sibsagar College Teacher Unit.

### **Research Project in Hands**

- **“Fabrication of solar cells based on Chemical Bath Deposition (CBD) Technique”** Funded by DeitY, New Delhi for 3 years (2012 to 2015), **Budget: 77.41 Lakhs.**
- **“Green synthesis of silver nanoparticles using four (4) plant extracts: A Comparative study of antibacterial activity”** Funded by UGC, New Delhi for 2 years (2012 - 2014), **Budget: 02 Lakhs.**

### **Research Interest:**

- Polymer nanocomposites of metals and semiconductors.
- ,Inorganic & Organic Solar cells.
- Biosynthesis and Antimicrobial activity of silver nanoparticles.
- Biosynthesis of magnetic material.

### **Research Guidance:**

- Visiting Faculty and Research Guide of Apex professional University, Arunachal.
- Supervising one Ph.D. Scholar from Dibrugarh University, Dibrugarh.

### **Other Recognitions:**

- Comfortable in handling & interpretation of data of UV-Visible Spectrophotometer, Fluorescence Spectrophotometer, Keithley-2400 source meter.
- Comfortable in handling HIVAC coating unit.
- Experienced in CBD and CVD techniques.

### **Convener/organizer:**

- i) Convener of “International Seminar and Workshop on Energy, Sustainability and Development (**ISWESD**)-2012, 12-14<sup>th</sup> October, Organized by the Department of Physics, Sibsagar College, Joysagar, Assam, India.
- ii) Convener of “ National Energy Conservation Day, 13-14<sup>th</sup> December, 2013, Organised by SCTU, Sibsagar College, Joysagar, Assam, India.”

### **Editorial Experience:**

**Guest Editor** of special issue of “International Journal of Innovative Research and Development, 7(2012), ISSN2278-0211 (online) ISSN- 2278- 7631 (print).”

### **Reviewer of peer reviewed Journals:**

1. **Applied Surface Science (I.F. 2.112)**
2. **Journal of Renewable and Sustainable Energy (I.F. 1.514)**
3. **Nanoscience and Nanotechnology letters (I.F. 0.89)**
4. **Advanced Materials letters (I.F. 1.9)**
5. **Journal of Materials Science: Materials in Electronics (I.F. 1.8)**

### **PUBLICATIONS**

1. **D. Saikia**, P.K. Saikia, P.K. Gogoi, Structural and optical properties of nanostructured CdS thin films deposited at different preparative conditions, *Chalcogenide letters*, 7(5) (2010) 317 – 324 (**Impact factor: 1.184**).
2. **D. Saikia**, P.K. Saikia, P.K. Gogoi, M.R. Das, P. Sengupta, M.V. Shelke, Synthesis and characterization of CdS/PVA nanocomposite thin films from a complexing agent free system. *Materials Chemistry and Physics*, 131 (2011) 223–229. (**Impact factor: 2.427**).
3. **D. Saikia**, P.K. Saikia, P.K. Gogoi, P. Saikia, Synthesis, characterization and photovoltaic application of silver doped CdS/PVA nanocomposite thin films, *Digest Journal of Nanomaterials and Biostructures*, 6( 2) (2011) 589-597. (**Impact factor: 1.123**).
4. P.Saikia, P.K. Saikia, **D. Saikia**, Fabrication and characterization of ZnSe/ZnTe/CdTe/HgTe multijunction solar cell, *Journal of Optoelectronics and Advanced materials-Rapid Communications*, 5(3) (2011), 204 – 207. (**Impact factor: 0.52**).
5. **D. Saikia**, P. Phukan, N. Goswami, P.K. Saikia, P.K. Gogoi, Synthesis of Polymer-CdSe Nanocomposite by Heat Induced Thermolysis Process and its Photovoltaic Applications, *International Journal of Innovative research and Development*, 7 (2012) 60-68. ISSN-2278-0211 (online) ISSN- 2278- 7631 (print)

6. N. Goswami, P. K. Gogoi, M. K. Bhattacharya, **D. Saikia**, Synthesis, Characterization and Application of Cobalt (II), Nickel (II) and Copper (II) Complexes as Sensitizer Dye in DSSC with 4-cyanopyridine and isothiocyanate ligand, *International Journal of Innovative Research and Development*, 7 (2012) 92-102. ISSN-2278-0211 (online) ISSN- 2278- 7631 (print).
7. M. Baruah, L.Sarma, **D. Saikia**, S. Sarma, Average monthly solar radiations at various places of north east India, *International Journal of Innovative Research and Development*, 7(2012) 287-294. ISSN-2278-0211 (online) ISSN-2278- 7631 (print).
8. **Dulen Saikia**, Pallabi Phukan, M. Barua, S. Sarma, Synthesis and Characterization of Copper Ferrite nanomagnetic material by Co-precipitation technique, *Indian Journal of Science and Technology*, 6(2013) 105-106. ISSN – 0974-6846.
9. **D. Saikia**, P.K. Saikia, P.K. Gogoi, S. Sarma, Synthesis of polymer-PbS nanocomposite by solar-irradiation induced thermolysis process and its photovoltaic applications, *Journal of experimental Nanoscience*, 8 (3) (2013) 403–411. (Impact factor: 1.043).
10. Pallabi Phukan, **Dulen Saikia**, Optical and structural investigation of CdSe quantum dots dispersed in PVA matrix and its Photovoltaic Application, *International Journal of Photoenergy*, Volume 2013, Article ID 728280. (Impact factor: 2.66).
11. **Dulen Saikia**, Green Synthesis and Optical Characterizations of Silver Nanoparticles, *International Journal of Latest Research in Science and Technology* 3(2) 2014, pp.132-135. (Impact factor: 0.480).
12. **Dulen Saikia**, Pallabi Phukan, P.K. Saikia, Synthesis and Characterization of PVA capped CdSe Nanoparticles from an Ammonia Free Bath, *International Journal of Latest Research in Science and Technology* 3(2) 2014, pp. 156-159. (Impact factor: 0.480).
13. **Dulen Saikia**, Pallabi Phukan, Fabrication and evaluation of CdS/PbS thin film solar cell by chemical bath deposition technique, *Thin solid films*, 562 (2014), pp. 239–243. (Impact factor: 1.867).
14. **Dulen Saikia**, Pradip K. Gogoi, Pallabi Phukan, Nilave Bhuyan, Sangeeta Borchetia, Jibon Saikia, Green synthesis of silver nanoparticles using Asiatic Pennywort and Bryophyllum leaves extract and their antimicrobial activity, *Advanced Material Letters*, 2015, 6(3) pp. 260-264(Impact factor: 1.9).

15. B. J. Baruah, M. N. Bora, L. Saikia, **D. Saikia**, P. Phukan & K. C. Sarma, Effects of deposition temperature on structural, optical and electrical properties of TEA complexed nanocrystalline films of PbS prepared from lead acetate with reduced concentration, *Journal of Materials Science: Materials in Electronics* DOI 10.1007/s10854-015-4242-2. (*Impact factor: 1.9*).
16. Purna K. Boruah, Priyakshree Borthakur, Gitashree Darabdhara, Chaitanya K. Kamaja, Indrapal Karbhal, Manjusha V. Shelke, Pallabi Phukan, **Dulen Saikia** and Manash R. Das\* Sunlight assisted degradation of dye molecules and reduction of toxic Cr(VI) in aqueous medium using magnetically recoverable Fe<sub>3</sub>O<sub>4</sub>/reduced grapheme oxide nanocomposite, *Royal Society of Chemistry Advances*, , 15<sup>th</sup> January 2016: DOI: 10.1039/c5ra25035h (*Impact factor: 3.8*).
17. P. Phukan, P. K. Saikia, M. R. Das, D. Saikia\* Tuning the physical properties of CBD PbSe thin films for photovoltaic application, *Journal of Materials Science: Materials in Electronics*, (*under Review.*)

**Seminars attended with paper (National and International):**

1. National Seminar on Urban waste disposal and its impact on environment and public health: quest for solution” organized by Sibsagar College, Joysagar, Assam, 23<sup>rd</sup> – 25<sup>th</sup> September, 2010.
2. National Seminar on Applications of Basic Sciences to Engineering and Technology in Don Bosco University, Guwahati, Assam, 12<sup>th</sup> -13<sup>th</sup> March , 2010.
3. International Conference on Emerging Technologies on Renewable Energy in Anna University, Chennai, Tamilnadu, 18<sup>th</sup> -21<sup>st</sup> August, 2010.
4. International Conference on Renewable Energy in Tezpur Universty, 2<sup>nd</sup>-4<sup>th</sup>, November, 2011.
5. International Conference on Advanced Nanomaterials and Nanotechnology in IIT, Guwahati, 8<sup>th</sup> -10<sup>th</sup> December, 2011.
6. International Conference and Workshop on nanostructure Ceramics and Nanomaterials in Delhi University, Delhi, 13<sup>th</sup> -16<sup>th</sup> March, 2012.
7. International seminar and workshop on Energy, Sustainability and Development in Sibsagar College, Joysagar, Assam, 12-14<sup>th</sup> October, 2012.
8. International Conference on Recent Advances in Nanoscience and Nanotechnology, Jawaharlal Nehru University, New Delhi, 15, 16 December, 2014.