

Curriculum vitae

Name: Dr. Khwairakpam Shantakumar Singh

**Designation: Assistant Professor (Physics), Department of Education,
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RESEARCH INTERESTS

Laser-matter interaction (Experiment and Simulation), Ultrafast laser ablated plasma, Laser-induced breakdown spectroscopy (LIBS), Laser induced nanoparticles, Laser micromachining, Plasma diagnostics, Physics & Entrepreneurship, and Social Entrepreneurship.

ACADEMIC QUALIFICATIONS

- ❖ **Ph.D. (Physics)**, IIT Guwahati, India.
- ❖ **M.Sc. (Physics)**, Manipur University, Imphal, Manipur, India.
- ❖ **B. Sc. (Hons.) in Physics**, Manipur University, Imphal, Manipur, India.

AWARDS/ACHIEVEMENTS

- ❖ GATE Scholarship (2011-2016) from IIT Guwahati, India
- ❖ SLET-2015 (State Lectureship Eligibility Test of North-East States)
- ❖ K. Saraogi memorial Gold Medal in M.Sc.
- ❖ Paper titled “*Multi-structured temporal behavior of neutral copper transitions in laser-produced plasma in the presence of variable transverse static magnetic field*” by **Khwairakpam Shantakumar Singh** and A.K. Sharma published in Phys. Plasmas **23**, 013304 (2016) appeared amongst the most read regular articles in the journal Physics of Plasmas (AIP), 2016.

TEACHING EXPERIENCES

- ❖ **Temporary faculty, Department of Physics, NIT Silchar** (17th July 2017 -30th November 2017)
- ❖ **Assistant Professor (Physics), Department of Education, Assam University Silchar** (4th December 2017- till date)
- ❖ **Membership of Professional Societies**

(i) *Life member (LM-1261) of Indian Laser Association (ILA), RRCAT, Indore.*

(ii) *Optical Society of America (OSA), Washington, USA.*

REFRESHER/ORIENTATION COURSE/FACULTY DEVELOPMENT PROGRAM

- ❖ 29th Orientation Course (24th October-13th November 2019) org. by UGC-HRDC Mizoram University.

PROJECT

UGC-BSR Research Start-up-grant (Ongoing):

Title: **Theoretical and numerical studies on nanosecond and femtosecond laser ablation of transparent conducting thin film.**

PUBLICATIONS

❖ Peer reviewed Journals

1. **Khwairakpam Shantakumar Singh** and Ashwini Kumar Sharma, “*Numerical studies on laser ablation of copper target in the presence of magnetic field in air at atmospheric pressure*” (Under review)
2. **Khwairakpam Shantakumar Singh**, Alike Khare, and Ashwini Kumar Sharma “*Effect of uniform magnetic field on laser-produced Cu plasma and the deposited particles on the target surface*” *Laser Part. Beams* **35**, 352 (2017)
3. **Khwairakpam Shantakumar Singh** and Ashwini Kumar Sharma “*Time-integrated optical emission studies on laser-produced copper plasma in the presence of magnetic field in air ambient at atmospheric pressure*” *Appl. Phys. A* **123**, 325 (2017).
4. **Khwairakpam Shantakumar Singh** and Ashwini Kumar Sharma “*Melt ejection from copper target in air in the presence of magnetic field using nanosecond pulsed laser*”, *J. Vac. Sci. Technol. A* **35**, 031305 (2017).
5. **Khwairakpam Shantakumar Singh** and Ashwini Kumar Sharma “*Effect of lens focusing distance on laser-produced copper plasma in air in the presence of static transverse magnetic field.*” *Phys. Plasmas* **23**, 123514 (2016).
6. **Khwairakpam Shantakumar Singh** and Ashwini Kumar Sharma “*Spatially-resolved behavior of laser-produced copper plasma along expansion direction in the presence of static uniform magnetic field.*” *Phys. Plasmas* **23**, 122104 (2016).
7. **Khwairakpam Shantakumar Singh** and Ashwini Kumar Sharma “*Effect of variation of magnetic field on laser ablation depth of copper and aluminum targets in air atmosphere*” *J. Appl. Phys.* **119**, 183301 (2016).
8. **Khwairakpam Shantakumar Singh** and Ashwini Kumar Sharma “*Multi-structured temporal behaviour of neutral copper transitions in laser-produced plasma in the presence of variable transverse static magnetic field*” *Phys. Plasmas* **23**, 013304 (2016).

SOME OF SELECTED CONFERENCES

❖ International conferences

1. **Khwairakpam Shantakumar Singh** and Ashwini Kumar Sharma “*Effect of magnetic field on laser ablation during plasma formation: Experimental and finite element model study*”, XXVII IUPAP Conference on Computational Physics (2015), 2-5th Dec., 2015 IIT Guwahati.

2. **Khwairakpam Shantakumar Singh** and Ashwini Kumar Sharma “*Nanostructuring on copper target surface via pulsed laser ablation in the presence and absence of magnetic field in air*”, 4th International Conference on Advanced Nanomaterial and Nanotechnology (ICANN), 8-11th Dec, 2015, IIT Guwahati
3. **Khwairakpam Shantakumar Singh** and Ashwini Kumar Sharma “*Effect of uniform magnetic field on nanostructuring by laser ablation of copper at atmospheric pressure*”, 4th International conference on current Developments in atomic, molecular, optical and nano-physics with applications, (CDAMOP), 2015, 11-14th March, 2015, DRDO and Delhi University, Delhi.
4. **Khwairakpam Shantakumar Singh** and Ashwini Kumar Sharma “*Effect of uniform transverse magnetic field on the life-time of laser- produced copper plasma*”), 29th National Symposium on plasma science and technology & International conference on plasma and nanotechnology, 8-11th Dec., 2014, PSSI and M.K. University, Kottayam.

❖ **National conferences**

1. **Khwairakpam Shantakumar Singh** and Ashwini Kumar Sharma “*A 2D finite element model to simulate temperature field and ablation depth during laser ablation*” 2nd National symposium on non-linear and complex phenomena, 26-28th March, 2015, CPP-IPR, ACNCP and IASST, Guwahati.
2. **Khwairakpam Shantakumar Singh** and Ashwini Kumar Sharma “*Laser ablation depth enhancement of copper in the presence of external magnetic field*” DAE-BRNS National Laser Symposium-24, 2015, ILA and RRCAT, Indore.
3. **Khwairakpam Shantakumar Singh** and Ashwini Kumar Sharma “*Effect of laser focusing distance on laser – produced copper plasma in the absence and presence of uniform transverse magnetic field*”, 30th National Symposium on plasma science and technology, 1-4 December, 2015 PSSI and SINP, Kolkata
4. **Khwairakpam Shantakumar Singh**, Eshita Mal, Alike Khare and Ashwini Kumar Sharma “*Laser-induced breakdown spectroscopy (LIBS): principle, instrumentation, and applications*”, TEQIP symposium to celebrate the 2015 International year of light, 31st Oct, 2015, IIT Guwahati.
5. **Khwairakpam Shantakumar Singh**, Prahlad K. Baruah and Ashwini K. Sharma “*Spectroscopic studies on laser induced copper plasma in presence of external magnetic field*”, DAE-BRNS National Laser Symposium-22, 8-11th Jan., 2014, ILA and MIT, Manipal
6. **Khwairakpam Shantakumar Singh**, Alike Khare and Ashwini Kumar Sharma, “*Spectroscopic study of laser-produced copper plasma in uniform magnetic field*” DAE-BRNS National Laser Symposium-23, 3-6th Dec, 2014, ILA and S.V. University, Tirupati
7. **Khwairakpam Shantakumar Singh**, Prahlad Kumar Baruah, Eshita Mal, Alike Khare and Ashwini Kumar Sharma “*Effect of uniform magnetic field on laser ablation*”, DAE-BRNS National Laser Symposium-23, 3-6th Dec, 2014, ILA and S.V. University, Tirupati
8. **Khwairakpam Shantakumar Singh** and Ashwini K. Sharma “*Measurement of Stark width in laser produced copper plasma in the presence of magnetic field*”, 28th National Symposium on

❖ **Workshop/webinar & School**

1. One day International Webinar on “*Anti-Viral Drug Discovery: Creation of Armoury for the Present and Future Pandemics*” org. by Department of Chemistry, Assam University Silchar. August 8th, 2020.
2. International Webinar on “*Climate Change and Extremes*” org. by Department of Physics, Assam University Silchar. September 11th-12th, 2020.
3. Webinar on “*Story of the dark Universe*” org. by Department of Physics, Assam University Silchar. September 28th, 2020.
4. Webinar on “*Effective scientific writing and strategies of research papers publications in high impact journals*” org. by Pandit Deendayal Petroleum University, Gandhinagar. November 28th, 2020.
5. Special lecture on “*Gender justice as an instrument of human rights protection*” org by Department of Education, Assam University Silchar. December 10th, 2020.
6. “*Computational Technique in Physics*” QIP, Department of Physics, IIT Guwahati (2013)
7. “*MATLAB workshop*” IEEE Student branch, IIT Guwahati (2013)
8. “*Compressive Sensing and Technical Writing*” IEEE Student branch, IIT Guwahati (2013)
9. “*IVCr workshop on X-ray diffraction systems and related applications*”, PANalytical & Department of Mechanical Engineering, IIT Guwahati (2014)
10. “*Laser produced plasmas: Physics and Applications*” 4th SERC (Science and engineering council) school (2012), RRCAT, Indore

SOME IMPORTANT LINKS

- ❖ <https://www.nature.com/subjects/plasma-physics>
- ❖ <https://phys.org/physics-news/plasma/>
- ❖ <https://physicstoday.scitation.org/journal/pto>
- ❖ https://ssir.org/articles/entry/social_entrepreneurship_the_case_for_definition