

DR. SHALINI LUMB TALWAR

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EDUCATIONAL QUALIFICATIONS

- 2005 Ph. D. (Physics) from University of Delhi, Delhi, India
Title of Thesis: 'Bose gas in a bounded harmonic potential: Bose-Einstein Condensation (BEC) and related thermodynamics'
- 1998 M. Sc. (Physics) from Hindu College, University of Delhi, Delhi, India
- 1996 B.Sc. (H) Physics from Maitreyi College, University of Delhi, Delhi, India
- 1993 A.I.S.S.C.E. (Class XII) from S. D. Public School affiliated to C.B.S.E., Delhi, India
- 1991 A.I.S.S.E. (Class X) from S. D. Public School affiliated to C.B.S.E., Delhi, India

PROFESSIONAL QUALIFICATIONS

1. Qualified the **Joint CSIR-UGC JRF/NET Examination for Junior Research Fellowship and NET** in December 1998.
2. **Diploma Course** in 'Advanced Learning Course in MS Office & Windows 95' from IEC Softwares Ltd from January 6, 1999 to April 5, 1999

CAREER PROFILE

March 2016 – till date	Associate Professor, Department of Physics, Maitreyi College, University of Delhi, Delhi, India
March 2008 - March 2016	Assistant Professor, Department of Physics, Maitreyi College, University of Delhi, Delhi, India
Oct. 2006 - March 2008	Lecturer (Temporary), Department of Physics, Miranda House, University of Delhi, Delhi, India
July 2003 - Oct. 2006 & July 2001 - Feb. 2002	Lecturer (Ad-hoc), Department of Physics, Miranda House, University of Delhi, Delhi, India
Aug. 2002 - Dec. 2002 & Feb. 2000 - March 2000	Lecturer (Guest), Department of Physics, Miranda House, University of Delhi, Delhi, India

RESEARCH EXPERIENCE

- Have been working in the field of Atomic and Molecular Physics since 2012.

- Have worked as a Research Scholar under the supervision of Prof. S. K. Muthu in Department of Physics and Astrophysics, University of Delhi from September 1999 to March 2005 as a part of Ph. D work.
- The research work is theoretical and computational with programming in Fortran/C++ language on Unix/Linux platform or in MATLAB on Windows platform.

AREAS OF INTEREST/SPECIALIZATION

- Confined atomic and molecular systems
- Laser-atom interaction
- Condensed Matter Physics

JOURNAL PUBLICATIONS (during the last 5 years)

1. 'Non-ideal classical plasma: laser pulse effects and dynamic dipole polarizabilities' by **Shalini Lumb Talwar**, Sonia Lumb, Kalidas Sen and Vinod Prasad, Journal of Physics B: Atomic, Molecular and Optical Physics 56, 225002 (2023), ISSN (Print): 0953-4075, ISSN (Online): 1361-6455, Impact Factor: 1.6
2. 'Generation of adiabatic pulses' by Sonia Lumb, **Shalini Lumb Talwar**, Mustafa Kemal Bahar and Vinod Prasad, Physica E 144, 115431 (2022), ISSN: 1386-9477, Impact Factor: 3.369
3. 'Hydrogenic impurity in a distorted quantum disk: effects of hydrostatic pressure and temperature on the optical properties' by Sonia Lumb, **Shalini Lumb Talwar** and Vinod Prasad, European Physical Journal Plus 137, 672 (2022), ISSN (Electronic): 2190-5444, Impact Factor: 3.911
4. 'Optical properties of hydrogenic impurity in a distorted quantum disk' by **Shalini Lumb Talwar**, Sonia Lumb and Vinod Prasad, European Physical Journal Plus 137, 175 (2022), ISSN (Electronic): 2190-5444, Impact Factor: 3.911
5. 'Charge currents and induced magnetic fields in a bounded two-dimensional hydrogen atom' by **Shalini Lumb Talwar**, Sonia Lumb and Vinod Prasad, European Physical Journal D 75, 59 (2021), ISSN (Print): 1434-6060, ISSN (Online): 1434-6079, Impact Factor: 1.366
6. 'Generation of charge currents and magnetic pulses' by Sonia Lumb, **Shalini Lumb Talwar** and Vinod Prasad, Journal of Physics B: Atomic, Molecular and Optical Physics 53, 205002 (2020), ISSN (Print): 0953-4075, ISSN (Online): 1361-6455, Impact Factor: 1.703
7. 'Particle confined in modified ring-shaped potential' by **Shalini Lumb Talwar**, Sonia Lumb, Kalidas Sen and Vinod Prasad, Physica Scripta 95, 035404 (2020), ISSN (Print): 0031-8949, ISSN (Online): 1402-4896, Impact Factor: 1.985
8. 'Confinement effects on persistent currents in hydrogenic atoms' by Vinod Prasad, Sonia Lumb, **Shalini Lumb Talwar**, G. Lefkidis and W. Hübner, Physica Scripta 94, 125015 (2019), ISSN (Print): 0031-8949, ISSN (Online): 1402-4896, Impact factor: 1.985

9. 'Persistent currents and induced magnetization in presence of external magnetic field and transition probabilities in presence of combined laser pulse and external magnetic field for a confined hydrogen atom' by Vinod Prasad, **Shalini Lumb Talwar**, Sonia Lumb, G. Lefkidis and W. Hübner, Physics Letters A 383, 125775 (2019), ISSN: 0375-9601, Impact Factor: 2.278

CONFERENCE PROCEEDING PUBLICATIONS

1. 'Dynamic polarizabilities for screened potentials modified by ring potential' by Chanchal Yadav, Sonia Lumb, **Shalini Lumb Talwar**, and Vinod Prasad, AIP Conference Proceedings 2220, 130063 (2020), ISBN: 978-0-7354-1976-6
2. 'Confined two-dimensional hydrogen atom in magnetic field' by Kirtee Kumar, **Shalini Lumb Talwar**, Sonia Lumb, and Vinod Prasad, AIP Conference Proceedings 2220, 020098 (2020), ISBN: 978-0-7354-1976-6
3. 'Photoionization and excitation of confined positronium' by Dipti Munjal, **Shalini Lumb** and Vinod Prasad, Proceedings of the India International Science Festival - Young Scientists' Meet, Department of Science and Technology, Government of India – Dec 4-8 (2015)

BOOK CHAPTERS

1. 'Thermodynamic Properties of a Distorted Quantum Disk' by Sonia Lumb, Shalini Lumb Talwar and Vinod Prasad in 'Recent Progress in Science and Technology', Vol. 3, 43 (2023), B P International, ISBN 978-81-19039-34-0 (Print), ISBN 978-81-19039-37-1 (eBook)
2. 'Thermal properties of Hulthén quantum dot in non-central potential' by **Shalini Lumb Talwar**, Sonia Lumb and Vinod Prasad, International Aegean Conferences on Innovation Technologies & Engineering-V Proceedings Book Issued: March 10, 2022, 77 (2022), ISBN: 978-625-7720-74-8

ORAL PRESENTATION / POSTER PRESENTATION / INVITED TALKS

1. Delivered a talk on 'Electron currents and magnetic pulses in bounded atomic systems' as a **distinguished speaker on March 21,2022 at the virtual event - 3rd Advanced Chemistry World Congress** held from March 21,2022 to March 22, 2022
2. Oral presentation on 'Hydrogenic impurity in a distorted quantum disk: effects of hydrostatic pressure and temperature on the optical properties' in the 5th International Aegean Symposium on Innovation Technologies & Engineering held virtually from February 25 – February 26, 2022 in Izmir, Turkey
3. Oral presentation on 'Thermal properties of Hulthén quantum dot in non-central potential' in the 5th International Aegean Symposium on Innovation Technologies & Engineering held virtually from February 25 – February 26, 2022 in Izmir, Turkey

4. Abstract presentation on 'Effect of lockdown era on environmental sustainability' in the International Conference (Online) on 'Green Technology & Sustainable Development' organized by Jagannath University, Jaipur on July 24, 2020
5. Poster presentation on 'Exploring viscosity of refined oils of nutritional value as a parameter for health effects' in the National Conference on 'Interdisciplinarity: Prospects & Challenges' organized under Star College Scheme at Maitreyi College, University of Delhi from April 5, 2017 to April 7, 2017
6. Poster presentation on 'Photoexcitation and ionization of Exponential Cosine Screened Coulomb Potential (ECSCP) confined atom: dressed atom picture' by **Shalini Lumb**, Dipti Munjal and Vinod Prasad in the 4th International Conference on 'Current Developments in Atomic, Molecular, Optical and nano Physics with applications' (CDAMOP 2015) held at the Department of Physics and Astrophysics, University of Delhi from March 11, 2015 to March 14, 2015
7. Poster presentation on 'Effects of impurity on the transition probabilities of CQD in presence of electric field' by Brijender Dahiya, **Shalini Lumb** and Vinod Prasad in the International Conference and Workshop on nanostructured ceramics and other nanomaterials (ICWNCN) held at the Department of Physics and Astrophysics, University of Delhi from March 13, 2012 to March 16, 2012

ORIENTATION COURSE / REFRESHER COURSES ATTENDED

1. Swayam Annual Refresher Programme in Teaching Online Course (**ARPIT-2020**) on '**Introduction to Quantum Physics and its Applications**' from Dec. 1, 2020 to March 31, 2021
2. **Refresher Course** - Participated in the UGC-Sponsored 14th Refresher Course in Physics organized by Academic Staff College, Jawaharlal Nehru University from September 22, 2014 to Oct. 17, 2014
3. **Refresher Course** - Participated in the UGC-Sponsored Refresher Course in Physics and Electronics conducted by Centre for Professional Development in Higher Education, University of Delhi from September 20, 2012 to October 11, 2012
4. **Orientation Programme** - Participated in the UGC-Sponsored Orientation Programme OR-60 conducted by Centre for Professional Development in Higher Education, Institute of Lifelong Learning, University of Delhi from June 9, 2009 to July 6, 2009

FDPS / SHORT TERM COURSES ATTENDED

1. **1st Faculty Development Program (FDP) on Density Functional Theory Modelling of Materials (DFT-M)** organized by the Centre for Advanced Computational Studies, Delhi from February 4, 2024 to February 10, 2024 in online mode.
2. Two Weeks **Faculty Development Programme on 'Advanced Concepts for Developing MOOCs'** organized by Teaching Learning Centre (TLC), Ramanujan College, University of Delhi under the Scheme of Pandit Madan Mohan Malviya National Mission on Teachers and Teaching (PMMMNTT), Ministry of HRD, Government of India from July 2, 2020 to July 17, 2020

3. **Short Term Course on ‘Research Methodology’** organized by CPDHE, UGC-HRDC, University of Delhi from September 17, 2019 to September 23, 2019
4. **3 Day Faculty Development Program on ‘Personality Development’** conducted by ICT Academy held at Maitreyi College, University of Delhi from July 23, 2019 to July 25, 2019
5. **Workshop on ‘MOOCs, E-content Development and Open Educational Resources’** for one week organized by CPDHE, UGC-HRDC, University of Delhi from July 12, 2019 to July 18, 2019
6. One week interdisciplinary **Faculty Development Programme on ‘Disabilities Studies: Perspectives and Emerging Trends’** organized by Enabling Unit, Maitreyi College under the aegis of IQAC in collaboration with Teaching Learning Centre (TLC), Ramanujan College under the Scheme of Pandit Madan Mohan Malviya National Mission on Teachers and Teaching (PMMNMTT), Ministry of HRD, Government of India, held at Maitreyi College, University of Delhi from December 17, 2018 to December 23, 2018
7. One week **Faculty Development Programme on ‘Advancements in Integrated Sciences: Learning & Adaptation for Effective Teaching and Research’** jointly organized by Shyam Lal College, UGC-Human Resource Development Centre (UGC-HRDC), Jamia Millia Islamia and CSIR-Institute of Genomics & Integrative Biology (CSIR-IGIB) held at Shyam Lal College, University of Delhi from December 10, 2018 to December 16, 2018
8. **Faculty Development Programme on ‘Sustainable Development’** organized by ARSD College, University of Delhi under Star College Scheme, DBT from October 15, 2018 to October 22, 2018
9. **Faculty Development Programme on ‘Applied Physics and Embedded Systems Design’** organized by Department of Physics and Electronics, Rajdhani College, University of Delhi from December 14 to December 15, 2017
10. **Faculty Development Programme on ‘Multifunctional Materials for Energy Harvesting and Allied Devices’** organized by Department of Physics, ARSD College, University of Delhi in collaboration with IQAC under Star College Scheme on November 10, 2017

AWARDS RECEIVED

Received the National Research Excellence Award 2022 from IMRF Institute of Higher Education & Research, India on May 14, 2022

ADMINISTRATIVE PROFILE

1. Worked as an evaluator in the National Anveshika Experimental Skill Test (NAEST - 2021) organized by National Anveshika Network of India, a unit of IAPT in collaboration with Vigyan Prasar and Shiksha Sopan during Oct. - Nov., 2021
2. Worked as a member of the Committee of Courses and Studies for Hons., Post-graduate and Research Studies in Physics from July 28, 2017 to July 27, 2019

3. Worked as a member of the sub-committee of the Committee of Courses for Hons., Post-Graduate and Research Studies for the appointment of the examiners/paper-setters for B. Sc. (H)/Programme Examinations held during the academic sessions 2017-19
4. Worked as a member of committee for revision of undergraduate Physics syllabus of CBCS during March 2018
5. Worked as convener of the sub-committee for Question banks and model question papers of Mechanics, constituted by the Committee of Courses on December 13, 2018
6. Worked as a member of the sub-committee to finalize the guidelines/model question papers constituted by the Committee of Courses on December 13, 2018
7. Worked as Programme Officer, NSS from March 4, 2016 to May 3, 2018
8. Worked as Teacher-in-charge, Department of Physics, Maitreyi College during the academic session 2015-16 and 2009-10
9. Appointed and served as Teacher Representative in the Governing Body of Maitreyi College from January 24, 2014 to January 23, 2015
10. Was associated with teaching of 'Web Designing and Animation for Interactive Media' course run at the Campus of Open Learning in collaboration with Edinburgh's Telford College under the UK India Education and Research Initiative (UKIERI) project since January 2010 for eight consecutive batches
11. Worked as a convenor/member of various staff council committees