

# Dr. RASHMI CHAUHAN

## Professor (Physics)



Dept of Physics,  
DAV College,  
Kanpur (U.P) – 208001, India  
Ph: 9336339469

B-303, Rohni Villa,  
Patrakarpuram,  
Kanpur (U.P) – 208002, India  
E-Mail: chauhanrasmi@gmail.com

**Rashmi Chauhan** is working as Professor (Physics) in DAV College, Kanpur. She has been in teaching profession since 1995. After qualifying **NET-JRF** in 1996, she joined DAV College, Kanpur in 1999 through Higher Education Commission and fulfilled PhD degree in 2015. The area of research work involves linear/non-linear optical characterizations focused towards next generation optical/photonics devices based on chalcogenides. Her research work is in continuation at CSJM University (Kanpur, UP), whereas she has completed a couple of projects (sanctioned by UGC and IUAC) as principal investigator. Her research is being carried out in collaboration with renowned research laboratories in India such as IUAC New Delhi, IIT Kanpur, and DMSRDE.

### Qualifications

- PhD (Physics) in Jan-2015
- NET-JRF in Dec-1996
- M.Sc. (Physics) in 1995

### Publications

#### International

- Sharad Pandey, Amit Kumar Srivastava, Rashmi Chauhan "Optical and structural changes in intermediate phase Ge<sub>22</sub>Se<sub>78</sub> thin film under 100 MeV Ag swift-heavy ion irradiation", European Physical Journal Plus 138 (2023) 982 [**ISSN: 2190-5444, Impact Factor: 3.4**]
- Sharad Pandey, Rashmi Chauhan "Contribution of 80 MeV silicon swift heavy ion irradiation for reforming of optical and structural properties of amorphous Ge<sub>23</sub>Se<sub>62</sub>As<sub>15</sub> thin films for telecommunication and sensing applications" Journal of Non-Crystalline Solids 554 (2021) 120597 [**ISSN: 0022-3093, Impact Factor: 3.5**]
- Sharad Pandey, Rashmi Chauhan "Optical and structural modification in amorphous Ge<sub>24</sub>Se<sub>61</sub>Sb<sub>15</sub> thin films under 80 MeV Silicon swift heavy ions for telecom and optical applications" Optical Materials 111 (2021) 110686 [**ISSN: 0925-3467, Impact Factor: 3.9**]
- Sharad Pandey, Rashmi Chauhan "Band gap engineering using 100 MeV Ag swift heavy ion irradiation in amorphous Ge<sub>23</sub>Se<sub>62</sub>As<sub>15</sub> thin films" AIP Conference Proceedings 2265(1) (2020) 030322 [**ISSN: 1551-7616**]
- Sharad Pandey, Rashmi Chauhan "Optical and structural properties of 100 MeV Ag Swift Heavy Ion irradiated amorphous Ge<sub>24</sub>Se<sub>61</sub>Sb<sub>15</sub> thin films" Chalcogenide Letters 17(11) (2020) 573-582 [**ISSN: 1584-8663, Impact Factor: 0.885**]
- Sharad Pandey, S. G. Prasad, Rashmi Chauhan "Optical and Structural Changes in Swift Heavy Ion Irradiated Selenium Based Amorphous Chalcogenides for Optical Applications" Ferroelectrics 551(1) (2019) 74-86 [**ISSN: 1563-5112, Impact Factor: 0.8**]
- Rashmi Chauhan, Sharad Pandey, S. G. Prasad "Effect of 80 MeV Si swift heavy ion irradiation on Ge<sub>22</sub>Se<sub>78</sub> thin films for optical applications" Chalcogenide Letters 15(5) (2018) 267-279 [**ISSN: 1584-8663, Impact Factor: 0.885**]
- Rashmi Chauhan, K. K. Srivastava "Swift-Heavy Ion-Induced Effects on Optical and Dielectric Properties of Ge<sub>7</sub> As<sub>39</sub> Se<sub>54</sub> Thin Films" Materials Focus 6(4) (2017) 472-477 [**ISSN: 2169-4303**]
- Rashmi Chauhan, Sharad Pandey "The Ganga River Pollution: Analysis, Action and Remedies" Academic Social Research 2(4) (2016) 55-59 [**ISSN: 2456-2645**]
- Rashmi Chauhan, Sharad Pandey "Material Science and Technology for Ganga Pollution Prevention" Academic Social Research 2(4) (2016) 35-39 [**ISSN: 2456-2645**]

- Rashmi Chauhan, "Optical changes in amorphous As<sub>40</sub>Se<sub>60</sub> thin films with Ge addition", International Archive of Applied Sciences and Technology 7(3) (2016) 20-23 **[ISSN: 2277-1565]**
- Rashmi Chauhan, Sharad Pandey, Rahul Pandey "Structural Analysis of UV Exposed Amorphous As<sub>40</sub>Se<sub>60</sub> Thin Films using Raman Spectroscopy" Bulletin of Laser and Spectroscopy Society of India 22 (2016) 115-123 **[ISSN: 2229-3752]**
- Rashmi Chauhan, "Determination of Optical Transition Nature using R<sub>2</sub> Value", International Archive of Applied Sciences and Technology 6(3) (2015) 28-30 **[ISSN: 2277-1565]**
- Rashmi Chauhan, "UV induced optical and structural investigation of thermally evaporated amorphous Ge<sub>6</sub>As<sub>38</sub>Se<sub>56</sub> thin-film" Journal of Non-Oxide Glasses 7 (2015) 45-53 **[ISSN: 2605-6874]**
- Rashmi Chauhan, Arvind Tripathi, K. K. Srivastava "High-energy ion treatments of amorphous As<sub>40</sub>Se<sub>60</sub> thin films for optical applications" Progress In Natural Science - Materials International (SCI) 24(3) (2014) 239-246 **[ISSN: 1002-0071, Impact Factor: 4.7]**
- Project report for UGC minor research project (F. No. 8-3 (99)/2011 (MRP/NRCB)) entitled "Photo/ion induced effect in amorphous chalcogenide thin films for photonic applications" is imparted at INFLIBNET (Inter-University Centre of UGC) Research Project Database in Mar 2014.
- Rashmi Chauhan, Amit Kumar Srivastava, Arvind Tripathi, K. K. Srivastava "Effect of swift heavy ion irradiation on optical and structural properties of amorphous Ge-As-Se thin films" Chalc Lett 10(2) (2013) 63-71 **[ISSN: 1584-8663, Impact Factor: 0.885]**
- Rashmi Chauhan, Arvind Tripathi, Amit Kumar Srivastava, K. K. Srivastava "Effect of Swift Heavy Ion Irradiation on Optical Properties of Amorphous As<sub>2</sub>Se<sub>3</sub> Thin Films" AIP Conference Proceedings 1536 (2013) 599-600 **[ISSN: 1551-7616]**
- Arvind Tripathi, Rashmi Chauhan, K. K. Srivastava "Study Of Photostability In Amorphous Ge-As-Se Chalcogenide Thin Films" AIP Conference Proceedings 1536 (2013) 663-664 **[ISSN: 1551-7616]**
- Rashmi Chauhan, Arvind Tripathi, K. K. Srivastava "Optical non-linearity in amorphous Ge<sub>30</sub>Se<sub>70-x</sub>As<sub>x</sub> thin films" XXXVI Optical Society of India Symposium on Frontiers in Optics and Photonics 2011 (FOP 11), IIT Delhi, India, Dec 3-5 2011, p 137 **[ISBN: 978-81-309-1964-5]**
- Rashmi Chauhan, Arvind Tripathi, K. K. Srivastava "Amorphous Ge-As-Se thin films for photostable optical components" First International OSA Network of Students Conference in Asia (IONS-1), IIT Delhi, India, Dec 1-2 2011, p 46
- Rashmi Chauhan, Amit Kumar Srivastava, Arvind Tripathi, K. K. Srivastava "Linear and nonlinear optical changes in amorphous As<sub>2</sub>Se<sub>3</sub> thin film upon UV exposure" Progress In Natural Science - Materials International (SCI) 21(3) (2011) 205-210 **[ISSN: 1002-0071, Impact Factor: 4.7]**
- Madhu Mishra, Rashmi Chauhan, K. K. Srivastava "Optical Properties Of Amorphous Thin Film Of Se-Te-Ag System Prepared Using Thermal Evaporation Technique" Progress In Natural Science - Materials International (SCI) 21(1) (2011) 36-39 **[ISSN: 1002-0071, Impact Factor: 4.7]**
- Rashmi Chauhan, Amit Kumar Srivastava, Arvind Tripathi, Madhu Mishra, K. K. Srivastava "Photoinduced effect in Te-As-Se thin films for photonic applications" Proc. SPIE 8173 (2010) 81731C1-81731C10 **[ISSN: 0277-786x]**
- Rashmi Chauhan, Amit Kumar Srivastava, Arvind Tripathi, K. K. Srivastava "Photo-induced optical changes in Ge<sub>x</sub>As<sub>40</sub>Se<sub>60-x</sub> thin films" Progress In Natural Science - Materials International (SCI) 20 (2010) 54-60 **[ISSN: 1002-0071, Impact Factor: 4.7]**
- Rashmi Chauhan, Amit Kumar Srivastava, Madhu Mishra, K. K. Srivastava "Effect of UV exposure on some optical properties of As-Se based chalcogenide glasses" Integrated Ferroelectrics 119(1) (2010) 22-32 **[ISSN: 1058-4587, Impact Factor: 0.7]**

- Madhu Mishra, Rashmi Chauhan, K. K. Srivastava "The effect of annealing on some optical properties in Se-Te-Ag glasses" *Integrated Ferroelectrics* 118(1) (2010) 34-44 [**ISSN: 1058-4587, Impact Factor: 0.7**]
- Rashmi Chauhan, Amit Kumar Srivastava, Madhu Mishra, K. K. Srivastava "Ge-As-Se chalcogenide thin films for integrated optics" *Proceedings of 12th International symposium on microwave and optical technology (ISMOT 2009)*, New Delhi, India, 16-19 Dec 2009, p 590-593 [**ISBN 10: 0230-32846-6, ISBN 13: 978-0230-32846-4**]
- Rashmi Chauhan, Preeti Dwivedi and K.K. Srivastava "Se-Te-Pb thin films for photonic applications" *Proceedings of 53rd DAE-Solid State Physics Symposium (DAE-SSPS 2008)*, 16-20 Dec 2008, v 53 p 727 [**ISBN: 978-81-8372-044-1**] (Got best poster presentation award on this paper)

### **National**

- R. Chauhan, A. K. Srivastava, K. K. Srivastava, D. K. Avasthi "Ion-induced optical treatment of amorphous chalcogenide thin films for next generation photonic/optical components", *IUAC Annual Report 2012-13*, Chapter-5, p 125-126
- Rashmi Chauhan, A. K. Srivastava, K. K. Srivastava, "Linear optical absorption in amorphous Ge-As-Se chalcogenide thin films" *Proceedings for National Workshop on Advancement of Nano Materials and its Applications*, Feb 09-11 2012, p 154-157 [**ISBN: 978-81-921665-3-7**]
- Rashmi Chauhan, A. K. Srivastava, K. K. Srivastava, "Amorphous As-Se based chalcogenide thin films for micro/nano fabrication" *Proceedings for National Conference on Advancement of Nano Materials and its Applications*, Feb 15-16 2011, p 96-99
- Rekha Sharma, RS Yadav, Rashmi Chauhan, Arvind Tripathi, Abhay Saxena, Editor in *Proceedings for National Conference on Advancement of Nano Materials and its Applications*, Dept of Physics, DA-V College, Kanpur (sponsored by CSIR, New Delhi), Feb 15-16 2011
- Rekha Sharma, RS Yadav, Rashmi Chauhan, Abhay Saxena, Editor in *Souvenir for National Conference on Advancement of Nano Materials and its Applications*, Dept of Physics, DA-V College, Kanpur (sponsored by CSIR, New Delhi), Feb 15-16 2011
- Rashmi Chauhan and K. K. Srivastava, "Some optical constants of Bi-Se-Zn thin films" *Proceedings of National Conference on Recent Advances in Condensed Matter Physics (RACMP 2009)*, 24-25 May 2009, p 77-78
- Rashmi Chauhan and K.K. Srivastava "The effect of compositional variation on some optical properties in Bi-Se-Zn glasses" *Journal Purvanchal Academy of Sciences* v 14 p 43-51 (2008) [**ISSN: 0972 – 3498**]

### **Projects**

- Minor research project (File No: F. No. 8-3 (99)/2011 (MRP/NRCB) Dated: 29 Dec 2011, approved by UGC in Dec 2011) entitled "Photo/ion induced effect in amorphous chalcogenide thin films for photonic applications" is submitted to UGC on 26 Feb 2014
- BTR-4 project (BTR No: 56402-MS) entitled "Effect of ion exposure on optical and structural properties of amorphous chalcogenide thin films" is approved at Inter-University Accelerator Centre, New Delhi in Aug 2014
- BTR-1 project (BTR No: 49102-MS) entitled "Effect of ion exposure on optical and structural properties of amorphous chalcogenide thin films" is completed at Inter-University Accelerator Centre, New Delhi in January 2011

### **PhD Supervision**

- Sharad Pandey (PhD awarded in 2021 on the topic: ion induced optical and structural effects in amorphous chalcogenide thin films)

### **Foreign Visits**

- Visited IUMRS-ICA 2010 (11<sup>th</sup> IUMRS International Conference in Asia) at Qingdao, China from 25-28 Sept 2010 – Sponsored by UGC, India.

### **Awards and Recommendations**

- The paper entitled "Photo-induced optical changes in  $\text{Ge}_x\text{As}_{40}\text{Se}_{60-x}$  thin films" is one of the six recommended papers presented at IUMRS-ICA 2010 to be published in a High Level Journal in the Materials field: Progress in Natural Science.
- Award of honor for Oral Presentation in National Conference on Recent Advances in Condensed Matter Physics (RACMP 2009), NIT Hamirpur, Himachal Pradesh, India, 23-24 May 2009
- Best poster presentation award in 53rd DAE Solid State Physics Symposium (DAE-SSPS 2008), Bhabha Atomic Research Center, Mumbai, India, 16-20 Dec 2008

### **Memberships**

- Lifetime Membership of MRS-India, Life Membership No: LMB 1688
- Lifetime Membership of Society for Materials Chemistry (SMC), Life Membership No: LM-398
- Lifetime Membership of Indian Association of Physics Teachers (IAPT), Life Membership No: 7670L4307
- Lifetime Membership of Indian Science Congress, Life Membership No: L11712
- Lifetime Membership of Vigyan Bharti, Life Membership No: 104

### **Others**

- Contributed as Reviewer for research papers in recognized journals i.e. Elsevier, Taylor and Francis and AIP Proceedings.