

RESUME

Personal Detail

Name Dr. Veena Sharma
Date of Birth 21-04-1981
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Vishwas Mandir, Rampura Phul, Bathinda
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Academic Qualification

Degree	University	Year	Subjects	% of marks
Ph.D	Panjab University Chandigarh (P.U.)	2009	Expt. Atomic Physics (X-ray fluorescence)	
U.G.C/NET	U.G.C	2005 & 06	Physics	Qualified
GATE	HRDG	2005	Physics	147 Rank
Post graduation (M.Sc) Physics Hons. School	Panjab University Chandigarh (P.U.)	2003	Physics (Adv. Statistical Phy., Classical, Expt.& Theo. Nuclear Particle Phy., Expt.&Theo. Condensed Matter , Electronics Qtm mech.)	78.9%
Graduation (B.Sc) Physics Hons.School	Panjab University Chandigarh (P.U.)	2001	Physics, Chemistry, Maths	62.4%
Senior Secondary School (XII)	C.B.S.E.	1998	Physics, Chemistry, Maths, English	71%
Secondary School (X)	C.B.S.E.	1996	Physics, Chemistry, Maths, Biology, English	78.8%

Awards and Scholarships

- **Senior Research Fellowship** of Council of Scientific and Industrial research **SRF-CSIR**
- **Meritorious student Fellowship** of University Grant Commission (U.G.C.)
- Qualified All India University Grant Commission entrance test for teaching, (**U.G.C.**).
- Qualified All India Graduate Aptitude Test in Engineering (**GATE-2005**) with 147 All India Rank.
- **Silver Medal position** and **Distinction** in the Panjab University at the Post Graduation level
- Fellowship of Yogananda Society during Post Graduation
- **State Level Fellowship** during Graduation
- **State Level Merit** certificate in science at secondary level
- 2nd position in Chandigarh in Writing Competition organized by State Institute of Education Chandigarh
- Prize in paper presentation during Chandigarh Science Congress (2007 & 2008)

Teaching Experience

1. Assistant Professor, GZS College of Engineering and Technology, Bathinda, August 2016 onwards.
2. Assistant Professor MM Modi College, Patiala, Feb 2016 -August 2016.
3. Assistant Professor S.D. College Barnala, August 2015-Feb 2016.
4. Assistant professor at Fateh College for Women, Rampura Phul, Distt. Bathinda, from April 2012 to August 2015.
5. Assistant Professor D. A. V. College Sector 10, Chandigarh, July 2009-Feb 2012.
6. Teaching Assistant Graduate Classes; B.Sc (H.S.), Department of Physics Panjab University Chandigarh, for the year 2007-08.

Subject taught (PG Classes): Statistical Mechanics, Classical Mechanics, Nuclear Physics, Mathematical Physics and Classical Electrodynamics to postgraduate students.

Subject taught (UG Classes): Electricity and Magnetism, Optics, Statistical Mechanics, Nuclear Physics and Mechanics.

Research Experience

Thesis Title “Investigation of photon-atom interaction processes and subsequent radiative transitions in the X-ray energy region”.

The investigations include measurements of L_i ($i=1-3$) and M_i ($i= 1-5$) subshell x-ray differential cross sections for elements in the atomic range $33 \leq Z \leq 57$ and $67 \leq Z \leq 79$, respectively. The radiative resonant Raman scattering measurements were performed in different chemical forms of the $_{59}\text{Pr}$ and $_{57}\text{La}$ elements. Alignment of primary L_i subshell vacancy states produced following photoionisation and RRS have been investigated through measurement of anisotropy in the subsequent radiative emission. All the measurements were performed using EDXRFF technique. As an application of x-ray emission subsequent to photoionisation, $_{34}\text{Se}$ elemental toxicity in the soil and water samples from Se- affected villages of Punjab state have been measured.

List of Publications (International Journal)

1. L subshell vacancy decay processes for the elements with $52 \leq Z \leq 57$ following ionization using Mn $K\alpha$ x rays.
Veena Sharma, S. Kumar, D. Mehta and N. Singh, Phys. Rev. A **78**, 012507 (2008).
2. Allignment of M subshell vacancy states following photoionsation $79 \leq Z \leq 92$ at 5.96 keV.
S. Kumar, **Veena Sharma**, D. Mehta and N. Singh, Phys. Rev. A **77**, 032510 (2008).
3. Rayleigh, Compton and K shell radiative resonant Raman scattering in $_{83}\text{Bi}$ for 88.034 keV γ -rays.
S. Kumar, **Veena Sharma**, D. Mehta and N. Singh, Nucl. Instrum. and Methods **264**, 1 (2007).
4. $M\xi$, $M\alpha\beta$, $M\gamma$ and Mm X-ray production cross-sections for elements with $71 \leq Z \leq 92$ at 5.96 keV photon energy.
M. Sharma, **Veena Sharma**, S. Kumar, S. Puri and N. Singh, Rad. Phys. Chem. **75**, 1503 (2006).
5. Elastic scattering of 59.54 keV γ rays in elements with $22 \leq Z \leq 92$ at momentum transfer $0.4 \leq x \leq 4.7\text{\AA}^{-1}$.
S. Kumar, **Veena Sharma**, J. S. Shahi , D. Mehta and N. Singh, Eur. Phys. J. D. Phys. **55**, 23(2009).
6. Resonant Raman scattering contribution to attenuation of x-rays at energies in the lower vicinity of the K shell ionization threshold of some elements.
S. Kumar, **Veena Sharma**, M. Alrakabi, D. Mehta and N. Singh
J. Appl. Phys. **105**, 104909 (2009).
7. Alignment of L_3 subshell vacancy states in Au, Bi, Th and U following photoionisation and effect of external magnetic field.
M. Alrakabi, S. Kumar, **Veena Sharma**, G. Singh, and D. Mehta Eur. Phys. J. D. Phys. **67**, 99(2013).

Books Published

B.Sc Practical Physics, Sapatrishi Publication Muktsar ISBN 9789383338122.

Symposium/Conference

1. Measurement of L₃M RRS cross sections.
Proceedings of National Conference on Recent trends physical, Chemical, and Environment Sciences (March-2016), held at Advance College of Science & Commerce, Ujjain (M.P.).
2. Synthesis and characterization of II-VI Semiconductor Nanostructures.
Kavita and Veena, proceedings of 8th National Conference on Recent Advances in Chemical, Biological and Environment Sciences (Feb-2016), held at Multani Mal Modi College, Patiala.
3. Measurements of angular-dependence of *L* x-ray emission for $_{56}\text{Ba}$ and $_{57}\text{La}$.
Veena Sharma, S. Kumar, A. Kumar, S. Kumar, D. Mehta and N. Singh, proceedings of 2nd Chandigarh Science Congress, *CHESCON-2008*.
4. *LM*-RRS Process and angular distribution of *L* x-rays.
Veena Sharma, S. Kumar, D. Mehta and N. Singh, proceedings of Diamond Jubilee National Seminar “Advances in Physics” at Panjab University, Chandigarh.
5. *L_i* subshell resolved cross sections for the elements with $42 \leq Z \leq 52$.
Veena Sharma, S. Kumar, D. Mehta and N. Singh, proceedings of 1st Chandigarh Science Congress, *CHESCON-2007*.
6. *L* subshell total ionization cross sections for the elements with $38 \leq Z \leq 50$.
Veena Sharma, S. Kumar, D. Mehta and N. Singh, proceedings of National Seminar on Radiation and Materials (NSRM-2007) at Punjabi University, Patiala.
7. Photon-atom scattering of 59.54 keV γ -rays in elements with $12 \leq Z \leq 92$.

S. Kumar, **Veena Sharma**, D. Mehta and N. Singh, proceedings of National Seminar on Radiation and Materials (NSRM-2007) at Punjabi University, Patiala.

8. Measurement of $K-L$, $K-M$ and $K-N$ resonant Raman scattering cross sections in ^{83}Bi for 88.03 keV γ -rays.

S. Kumar, **Veena Sharma**, D. Mehta and N. Singh, proceedings of 16th National symposium on Radiation Physics 2006, IGCAR, Kalpakkam.

9. $M\xi$, $M\alpha\beta$, $M\gamma$ and Mm X-ray production cross-sections for elements with $71 \leq Z \leq 92$ at 5.96 keV photon energy.

M. Sharma, **Veena Sharma**, S. Kumar, S. Puri and N. Singh, proceedings of 20th International Conference X05: x-ray and Inner-Shell Processes, University of Melbourne, Australia.

Other Symposium/Seminar/ Workshops Attended

1. National Conference on Recent trends physical, Chemical, and Environment Sciences (March-2016), held at Advance College of Science & Commerce, Ujjain (M.P.).
2. National Conference on Recent Advances in Chemical, Biological and Environment Sciences (Feb-2016), held at Multani Mal Modi College, Patiala.
3. INSPIRE Internship Program (Jan-2014), held at Fateh College For Women.
4. National Conference on Emerging Perspective & Sustainable Development in Physics, *EPSDP09*, held at D. A. V. College Abhor.
3. Laboratory Workshop for PG Teachers sponsored by IAPT, from 14th -18th Dec 2009 held at IPS Academy, Indore.
4. Awareness Workshop on “The Facilities of UGC-DAE Consortium for Scientific Research”, from 4th -5th Dec 2006 held at Physics Dept., Kurukshetra University.

Member of Professional Societies

Member of Indian Association of Physics Teachers (IAPT).

Member of Chandigarh Yoga Society.

Extra Curricular Activities

1. Academic contributions

- i. Evaluated answer scripts of B.Sc (III Semester) Punjabi University Patiala, December -2013 Examination.
- ii. External examiner for the evaluation of B.Sc (IV Semester) Punjabi University Patiala, May-2014 and Dec-2015 Examination.
- iii. Held various responsibilities during the successful conduction of INSPIRE internship camp January-2014.

2. NSS/Sports

Involved in the community service programs and the NSS camp organized in college campus. Also, organized exhibition entitled “Best out of waste”.

Also participated as well as hold various responsibilities in the successful conduction of the athletic meet in the college campus during the year 2013 and 2014.

3. Cultural Programme and Youth Festival

Held various responsibilities during the successful conduction of Punjabi University, Patiala Youth Festival-2012, Bathinda zone. Also organized other cultural programmes like Teej Festival etc.

4. Other Interest

Interested in the child psychology for the inclusive development of the students.