# Curriculum Vitae

Name : Sanjiv Puri
 Designation : Professor
 Department : Physics

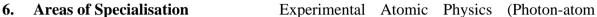
**4. Date of Birth** : May 31, 1967

**5.** Address for Correspondence : Punjabi University, Patiala-147002

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interactions / Ion-atom collisions / Elemental analysis using EDXRF and PIXE techniques).

## 7. Academic Qualifications

Sr. No.	Degree	Year	Board/Univ.	Division	Subjects Studied
1	B.Sc.	1986	PU, Chd.	$\mathbf{I}^{\mathrm{st}}$	Phys., Chem., Maths
2	M.Sc.	1988	PU, Chd.	$\mathbf{I}^{st}$	Physics
3	Ph.D.	1995	PU, Chd.		Experimental Atomic
					Physics
4	NET exam	1990	UGC-CSIR	Qualified	Physical Sciences

## 8. Scholarships / Fellowships

S. No.	Period	Fellowship Awarded	Name and place of Host Institution
1.	Jan., 1991-	Junior Research Fellow	Dept. of Physics, Panjab University,
	Dec., 1992	(Awarded by UGC, N. Delhi)	Chandigarh-160014, India.
2.	JanAug.,	Visiting Scientist	Dept. of Nuclear physics,
	1993	(Awarded by International Science	University of Lund, Lund, Sweden.
		Programs, Uppsala, SWEDEN.)	
3.	Sept., 1993 -	Senior Research Fellow	Dept. of Physics, Panjab University,
	Sept., 1994	(Awarded by UGC, N. Delhi)	Chandigarh-160014, India.
4.	Nov., 1998 -	Visiting Scientist	
	Feb., 1999	(Awarded by Punjab State Council for	Dept. of Physics, Panjab University,
		Science and Technology (PSCST)	Chandigarh-160014, India.
		Under Young Scientist Fellowship	
		scheme, Punjab, India)	
5.	June-July	Visiting Scientist	Dept. of Physics, Panjab University,
	2002	(Awarded by Indian National Science	Chandigarh-160014, India.
		Academy (INSA), N. Delhi, India)	-

## 9. Membership of Professional Bodies/Organisations

- i) Life member, Indian Society for Radiation Physics (ISRP)
- ii) Life member, Indian Physics Association (IPA)
- iii) Indian Society of Atomic and Molecular Physics (ISAMP)

## 10. Citations of Research publications (ORICID ID: <u>0000-0001-7669-3198</u>)

	As per SCOPUS	As per Research Gate	As per Google Scholar
Citations	2080	2193	2489
h-index	23	24	25
i10	-	-	43



## 11. Details of Employment

S. No.	Name of the Inst. /	Position Held	Duration	Job Responsibilities
	Employer			
1.	SLIET, Longowal	Lecturer (Phys.)	Sept. 1994 – Aug., 2002	Teaching and Research
	(Deemed University)			
2.	SLIET, Longowal	Assistant Prof. (Phys.)	Aug. 2002 – Aug., 2005	Teaching and Research
	(Deemed University)	(Equivalent to Reader)		
3.	U.Co.E., Punjabi	Reader (Phys.)	Aug., 2005 – Dec., 2005	Teaching and Research
	University, Patiala			
4.	U.Co.E., Punjabi	Associate Prof. (Phys.)	Jan., 2006 - Dec, 2008	Teaching and Research
	University, Patiala			
5.	Department of Basic and	Professor (Phys.)	Jan., 2009 – March, 2022	Teaching and Research
	Applied Sciences, Punjabi	-		
	University, Patiala			
6.	Department of Physics,	Professor (Phys.)	1 April, 2022 onwards	Teaching and Research
	Punjabi University,	•	_	-
	Patiala			

## 12. Administrative / Academic Experience

- ❖ Dean, Faculty of Physical Sciences from 01-01-2022 onwards
- **❖ Dean FYIP** from 07-07-2023 onwards
- ❖ Director, Planning and Monitoring, Punjabi University, Patiala from 01-04-2022 onwards
- ❖ Head, Dept. of Basic and Applied Sciences, Punjabi Univ. from Sept., 2013 to June, 2018.
- ❖ In-charge, Basic and Applied Sciences, U.Co.E. Punjabi Univ. from Nov., 2008 to Sept., 2013.
- ❖ Member, ACADEMIC COUNCIL, Punjabi Univ. for session 2015-16, 2021-22, 2022-23
- ❖ Nominated member of "Regulation Committee" of Punjabi University during 2021-2023.
- ❖ Coordinator, Multi-Disciplinary Five-Year Integrated Post Graduate Program (MD-FYIPGP) in Physical and Chemical Sciences (Major: Physics / Chemistry) (Honours School system) 2021-22 onwards.
- Chairman, "Board of Studies for MD-FYIPGP in Physical and Chemical Sciences" for 2021-22 onwards.
- **❖ Program Coordinator**, 5 Year Integrated M.Sc. programme in Physics (Honours School system), 2019-20, 2020-21, 2021-22.
- \* Chairman, "Board of studies in Basic and Applied Sciences" Punjabi Univ. from July, 2014 July, 2018.
- ❖ Member, "Board of Studies in Basic and Applied Sciences" Punjabi Univ. from July, 2014 July 2022.
- ❖ Member, "Board of Post-Graduate studies in Physics", Punjabi Univ., Jan 2023 onwards
- ❖ Member, "Board of Under-Graduate studies in Physics", Punjabi Univ., Jan 2023 onwards
- ❖ Member, BPSAR, Faculty of Physical Sciences, Punjabi Univ., Patiala from Sept., 2014 onwards.
- ❖ Member, "Research Award Committee" (RAC), Faculty of Physical Sciences, Punjabi Univ. during Jan. 2019-Jan. 2021; Jan, 2021-Jan, 2023.
- Co-Coordinator, Central Admission Cell, Punjabi Univ. for admissions during 2016-17.
- **Coordinator**, B. Tech. Admission Committee for 2015-16.
- "VC Nominee / Member, Selection / Screening committees" for promotions under CAS of UGC and for appointments of Assistant Professors / Associate Prof. / Professor in Punjabi University and its affiliated colleges.
- ❖ Convener / Member of different committees constituted by Punjabi Univ. for inspection of affiliated Colleges, Departmental committees (fee-concession committee, anti-ragging committee and different purchase committees) constituted from time to time since 2006

13. List of Courses/papers taught

S. No.	Paper	Class	
1.	Modern Physics	FYIP B.ScM.Sc. Physics (HS) Part II	
2.	Nuclear and Particle Physics	FYIP B.ScM. Sc. Physics (HS) – Part III	
3.	Applied X-ray Spectrometry	M. Sc. (Applied Physics) – Part II	
4.	Experimental techniques in Physics	Ph.D. (Physics) course work	
5.	C programming and Numerical methods	FYIP M.Sc. Physics (HS) – Part I	
	(Lab courses)		
6.	Applied Physics I & II	B. TechI	

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#### 14. Research Profile

## (i) Published Work (Please specify numbers only)

- (a) Research Papers in SCOPUS/SCI International Journals: 85
- (b) Research Papers presented in Conference/Symposia: 76
- (c) Books (Original): 02
- (d) Chapters in Books: 02

#### (ii) R & D Projects

- A project titled "Investigation of processes following L and M shell photoionization and analytical applications using EDXRF technique" worth **Rs.17.85lacs** awarded to me as *Principal Investigator* by the **Department of Science and Technology (DST), N. Delhi** vide no. SR/S2/LOP-19/2006, for a period of three and a half years (Aug., 2007 Feb., 2011) was implemented at U.Co.E., Punjabi Univ., Patiala.
- A project titled "Investigation of photon atom interaction processes at incident energies across the Li (i=1-3) subshell absorption edges for some medium Z elements using synchrotron radiation" worth **EURO12,000** awarded to me as Principal Investigator for conducting experiments at "Elletra Synchrotron", Italy by **International Atomic Energy Agency (IAEA), Austria** vide contract no. 18259 in April, 2014-2018.
- A project titled "Investigation of Chemical effects on the K/L X-ray intensity ratios and absorptionedge energy shifts in different compounds of some medium and high Z elements using synchrotron radiation" awarded to me as Principal Investigator for conducting experiments at Raja Rmanna Centre for Advanced Technology (RRCAT), Indore by <u>UGC-DAE Consortium for Scientific Research</u>, Indore vide no. CSR-IC-ISUM-51/CRS-334/2020-21/792 dated March 4, 2021.

I was one of the collaborating investigators in the following projects.

- A project titled "Photon Scattering in the x-ray energy region & its applications in energy dispersive x-ray fluorescence technique" worth Rs.9.5lacs sanctioned by Department of Science and Technology (DST) in 1997 vide no. SP/S2/L-06/96 (Principle Investigator: Prof. Nirmal Singh).
- A project titled "Investigations of the elastic and inelastic scattering processes in the X-ray energy region" worth Rs.7.00lacs sanctioned by Department of Science and Technology (DST) in 2003 (Principle Investigator: Prof. Nirmal Singh).

#### (iii) Invited Talks / Chairing a session / Resource person / Course Coordinator

- 1. Delivered an invited Lecture as **Resource Person** in ISTE sponsored short term course held at SLIET, Longowal during February 14-25, 2000.
- 2. Delivered an **invited Lecture** on "Source apportionment studies using receptor modelling for air pollution monitoring" in Seminar on "Computational Techniques in Physics" held at department of Physics, Panjab University, Chandigarh, during March 6-7, 2002.
- 3. Delivered an invited Lecture as a **Resource Person** in AICTE sponsored Staff Development Programme held at SLIET, Longowal during 7-18 Nov., 2005.
- 4. Delivered **invited talk** on "Recent Investigations of Li (i=1-3) Sub-shell Physical Parameters for XRP Cross sections and Intensity Ratios for Rare-earth Elements" during National Symposium on "Radiation Physics and Nanomaterials" (NSRPN-11) held at Department of Physics, Punjabi University, Patiala during Feb. 4-5, 2011.
- 5. *Chaired a technical session* during the National Conference on Advanced Materials and Radiation Physics (AMRP-2011) held at SLIET, Longowal during Nov. 4-5, 2011.
- 6. Delivered an **invited talk** on "Recent Investigations of Chemical effects on  $L_i(i=1-3)$  sub-shell x-ray relative intensities" during International conference on "Emerging trends in Physics for environmental monitoring and management" (ETPEMM-12) held at Department of Physics, Punjabi University, Patiala, during Dec. 17-19, 2012.
- 7. Delivered an **invited talk** on "*X-ray emission techniques for elemental analysis*" at Department of Applied Sciences, Chandigarh University, Gharuan, Mohali on Nov. 11, 2013.
- 8. Delivered an invited talk as **Resource Person** on "Nuclear techniques for elemental analysis" in a Short term course titled "Nuclear Techniques and Instrumentation" organised by Department of Applied Sciences, NITTTR, Chandigarh during 21-25 Oct., 2013.

- 9. Delivered **invited talk** on "Recent Investigations of L shell Physical Parameters for Photoionization Processes Using EDXRF Technique" in the XRF meeting at RRCAT, Indore during March 19-20, 2013.
- 10. Delivered **invited talk** on "Investigation of photon atom interaction processes at incident energies across the L(i=1-3) sub-shell absorption edges for some medium Z elements using synchrotron radiation" in the RCM-1 and RCM-2 of the Co-ordinated Research Project (G42005) organised by International Atomic Energy Agency (IAEA), Austria at ELETTRA Synchrotron, Trieste, ITALY during July 21-25, 2014 and May 30 June 03, 2016, respectively.
- 11. **Chaired a technical session** during the 4<sup>th</sup> National Conference on Advanced Materials and Radiation Physics (AMRP-2015) held at SLIET, Longowal during March 13-14, 2015.
- 12. Delivered **invited talk** on "Atomic Inner-shell ionization processes and analytical application using X-ray emission techniques" during Industry Academia week organised by PEC University of Technology, Chandigarh during April 6-10, 2015.
- 13. Delivered talk on "*Material composition analysis using EDXRF and PIXE techniques*" as **Resource Person** during Refresher Course organized by Human resource development Centre, Punjabi Univ., Patiala, on June 12, 2015.
- 14. Delivered talk on "Elemental composition analysis using techniques based on photon-atom interaction processes" as **Resource Person** during Refresher Course organized by Human resource development Centre, Punjabi Univ., Patiala, on June 27, 2016.
- 15. Delivered an invited talk on "X-ray based analytical techniques" as **Resource person** in a STC organised by Department of Applied Sciences, NITTTR, Chandigarh during 20-24 March, 2017.
- 16. Delivered a talk on "Study of energy and charge state dependence of cross sections for production of the line resolved M X-rays of some heavy elements by low energy ion beams" in 63<sup>rd</sup> Accelerator Users workshop held at IUAC, Delhi during 16-18 Dec., 2017.
- 17. Delivered a talk on "Investigation of projectile -energy and -Z dependence of cross sections for production of M X rays of some heavy elements by low velocity ion beams." in **64<sup>rd</sup> Accelerator Users** workshop held at Inter-University Accelerator Centre, Delhi during 5-7 July, 2018.
- 18. Delivered an **invited talk** on "Recent measurements of fundamental physical parameters characterizing x-ray emission processes using synchrotron radiation" in the **Consultancy meeting organized at HEADQUATERS of "International Atomic Energy Agency (IAEA)", Vienna, Austria during 17-21 Dec., 2018.**
- 19. Delivered a talk on "Recent Investigations of Photon-atom interaction processes in X-ray Energy region and analytical applications" as **Resource Person** during Refresher Course organized by Human resource development Centre, Punjabi Univ., Patiala, on Dec., 3, 2019.
- 20. Delivered an **invited talk** on "Recent Investigations of Synchrotron Radiation Induced Atomic Innershell Photoionization Processes" during the 5<sup>th</sup> National Conference on "Advanced Materials and Radiation Physics (AMRP-2020)" held at SLIET, Longowal during Nov. 9-11, 2020.
- 21. **Chaired a technical session** during the 5<sup>th</sup> National Conference on "Advanced Materials and Radiation Physics (AMRP-2020)" held at SLIET, Longowal during Nov. 9-11, 2020.
- 22. Delivered an **invited talk** on "Recent investigations of M -shell ionization processes induced by low velocity ion impact on some heavy elements" during workshop on "Atomic and Molecular Physics with ion beams" held at IUAC, New Delhi during 17-18 Nov., 2021
- 23. Delivered a talk on "Analytical techniques for elemental analysis" as **Resource Person** during Refresher Course organized by Human resource development Centre, Punjabi Univ., Patiala, on Dec., 09, 2021.
- 24. **COURSE-COORDINATOR** for Refresher Course in Physics organized by Human resource development Centre, Punjabi Univ., Patiala, during 27 Oct. 09 Nov, 2022.
- 25. Delivered a talk on "Analytical techniques for Material composition analysis" as **Resource Person** during Refresher Course organized by Human resource development Centre, GNDU, Amritsar, on Nov., 14, 2022.
- 26. Delivered an **invited talk** on "Investigations of low velocity ions induced M X-ray emission in some heavy elements" during the 6<sup>th</sup> National Conference on "Advanced Materials and Radiation Physics (AMRP-2023)" held at SLIET, Longowal during May 18-19, 2023.
- 27. **Chaired a technical session** during the 6<sup>th</sup> National Conference on "Advanced Materials and Radiation Physics (AMRP-2023)" held at SLIET, Longowal during May 18-19, 2023.

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# (iv) Ph.D. Students guided/under guidance (Details):

S. No.	Name of the Student	Title of Thesis	Year of
			Completion / Registration
1.	_	Study of processes following L and M shell Photoionization using EDXRF technique and analytical application.	2012
2.	Mr. Anil Kumar	Investigations of physical parameters for X-ray production cross sections using EDXRF technique.	2012
3.	Ms. Rajnish Kaur	Investigation of photon atom interaction processes at energies across the atomic inner-shell ionization thresholds of different elements using synchrotron radiation.	
4.	Ms. Shehla	Investigation of physical parameters for processes following atomic inner-shell ionization by ion impact	2019
5.	Ms. Vibha Ayri	Study of Synchrotron radiation induced inner-shell photoionization processes at energies across the Li absorptionedges of some heavy elements	
6.		Investigation of fundamental parameters for photon-atom interaction processes at energies near absorption-edges of some medium Z elements	
7.	Mr. Balwinder Singh	Investigation of charged particle induced atomic inner-shell ionization processes in some heavy elements	Registered Aug., 2019
8.		Study of Fundamental Physical Parameters for Synchrotron Radiation Induced L- and M-series X-ray Emission in Some Heavy Elements	_

## (V) Mentor of Post Doctoral Fellow

S,No.	Name of Student	Fellowship providing agency	Duration
1.	Dr. Harpreet Singh	UGC – D. S. Kothari Fellowship	June, 2019 – June 2022

# (VI) Overseas visits for research purposes

S. No.	Purpose	Duration
1.	<u>Visiting Scientist</u> at the Dept. of Nuclear Physics, University of Lund, with	Jan. – Aug., 1993
	Fellowship awarded by the "International Science Programs", Uppsala, SWEDEN.	
2.	Attended <b>summer school</b> on "Synchrotron Radiations" held at "The Abdus Salam	April 19 –May
	International Centre for Theoretical Physics (ICTP), Trieste, ITALY.	22, 1999
3.	Attended a first meeting of the <b>Research Coordination meeting</b> organized by	July 21-25, 2014
	International Atomic Energy Agency (IAEA), Austria held at the ELETTRA	
	Synchrotron, Trieste, ITALY.	
4.	To Perform experiments at ELETTRA Synchrotron, Trieste, ITALY.	Dec. 18-23, 2015
5.	Attended a second meeting of the <b>Research Coordination meeting</b> organized by	May 30 – June 03,
	IAEA, Austria held at the ELETTRA Synchrotron, Trieste, ITALY.	2016
6.	To perform experiments at ELETTRA Synchrotron, Trieste, ITALY.	Nov. 02-07, 2016
7.	To perform experiments at ELETTRA Synchrotron, Trieste, ITALY.	Dec. 03-11, 2017
8.	Invited To attend Consultancy meeting held at IAEA headquarters, Vienna,	Dec., 17-21, 2018
	Austria.	
9.	To perform experiments at ELETTRA Synchrotron, Trieste, ITALY.	Mar. 03-12, 2019
10.	To perform experiments at ELETTRA Synchrotron, Trieste, ITALY.	Dec. 08-16, 2019

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(VII) Visits to National Research Laboratories

S. No.	Purpose	Duration
1.	To perform experiments at INDUS-II Synchrotron, RRCAT, Indore.	Jun. 12-16, 2012
2.	To attend first interaction meeting on "Synchrotron based X-ray	Mar. 19-20, 2013
	fluorescence (XRF) techniques" held at RRCAT, Indore	
3.	To perform experiments at INDUS-II Synchrotron, RRCAT, Indore.	Jun. 10-13, 2013
4.	To perform experiments at INDUS-II Synchrotron, RRCAT, Indore.	Mar. 30-April 03, 2015
5.	To perform experiments at ECR ion accelerator, TIFR, Mumbai.	Nov. 21-26, 2016
6.	To attend 63 <sup>rd</sup> Accelerator User workshop at Inter-University	Dec. 16, 2017
	Accelerator Centre (IUAC), Delhi	
7.	To perform experiments at Low energy ion beam facility (LEIBF),	May 09-12, 2018
	Inter-University Accelerator Centre (IUAC), Delhi	
8.	To perform experiments at Low energy ion beam facility (LEIBF),	April 18-21, 2022
	Inter-University Accelerator Centre (IUAC), Delhi	
9.	To perform experiments at Atomic Physics Beamline of PELLETRON,	March 5-12, 2023
	Inter-University Accelerator Centre (IUAC), Delhi	

## (VIII) Technical Proficiency

I have long experience of handling sealed radioactive sources, low/high power X-ray tubes, vacuum chamber, cryogenic and Peltier-cooled solid-state x-ray /  $\gamma$ -ray detectors and associated electronic modules such as power-supplies, spectroscopy amplifiers, ADC and PC based multi-channel analysers and associated software.

For past several years, I have been using the XRF beam lines at the Synchrotron Radiation facilities at RRCAT, Indore, India and Elettra Synchrotron, Trieste, Italy for Fundamental Parameter measurements and the atomic physics beam lines at the particle-accelerators, TIFR, Mumbai and IUAC, New Delhi for ion-atom collision studies.

#### (IX) Reviewer/Referee for International Research Journals

"Nuclear Instruments and Methods B"; "Chemical Physics Letters"; "Radiation Physics and Chemistry"; "Pramana - J. Phys."; "Spectroscopy Letters"; "Canadian J. of Physics"; "Journal of Electron spectroscopy and Related Phenomenon"; "Heliyon"; "American Mineralogist"; "Radiation effects and defects in solids"; "Macromolecular Symposia"; "Applied Radiation and Isotope"; "X-Ray Spectrometry"; "Journal of Atomic Analytical Spectroscopy (JAAS)";

#### (X) List of Books Published

a. A book titled "Modern Physics: concepts and applications" authored by myself has been published by NAROSA Publishing Co., N. Delhi (First Edition in 2004). [ISBN: 978-81-7319-557-0]

This text-book will be useful for B.Sc. and B.E / B. Tech. students taking up Modern Physics course, as well as for those appearing in the National Education Test (NET) being conducted by UGC-CSIR.

#### **CONTENTS**

Special Theory of Relativity / Particle-Properties of Radiation / Atomic Structure / Wave Properties of Particles / Quantum Mechanics / Quantum Theory of Atom / Atom in an External Magnetic and Electric Field / X-rays and Their Applications / Lasers and Their Applications / Radioactivity and its Applications / Statistical Physics / Superconductivity / Optoelectronics / Nanoparticles and their applications.

b. A book titled "Physics for Engineering Applications" authored by myself has been published by NAROSA Publishing Co., N. Delhi (First Edition in 2010). [ISBN: 978-81-8487-041-1]

This textbook provides syllabus for *foundation course in Physics* being offered to the Engineering (B.E / B.Tech.) students. It will be very useful for students appearing for Graduate Aptitude Test for Engineering (GATE) and those appearing in the National Education Test (NET) conducted by UGC-CSIR.

#### **CONTENTS**

<u>Section I:</u> Simple Harmonic Oscillations / Damped Harmonic Oscillations / Forced Oscillations / Ultrasonic Waves. <u>Section II:</u> Interference of Light / Diffraction of Light / Resolving Power of Optical Instruments / Polarization of Light / Lasers and Their Applications / Optical Fibers. <u>Section III:</u> Scalar and Vector Fields / Maxwell Equations / Electromagnetic Waves.

<u>Section IV:</u> Special Theory of Relativity / Introduction to Quantum Physics / Quantum Mechanics / Basics of Quantum Computations / Statistical Physics. <u>Section V:</u> Radioactivity and Its Applications / X-rays and Their Applications / Radiation Interaction with Matter / Basic Principles of Radiation Detectors. <u>Section VI:</u> Crystal Physics / Physics of Semiconductors / Dielectric Materials / Magnetic Materials / Superconductors / Nanoparticles.

## (XI) Chapters in Books

(a) A chapter titled "Role of Trace Elements in Breast Cancer and Their Characterization Using X-Ray Fluorescence Techniques" in the book titled "Trace Elements and Its Effects on Human Health and Disease" published by "IntechOpen" (License CC BY 3.0) ISBN 978-1-83968-645-0

Harpreet Singh Kainth, Deeksha Khandelwal, Ranjit Singh, Gurjeet Singh and Sanjiv Puri

December 2020, DOI: 10.5772/intechopen.95491

https://www.intechopen.com/online-first/role-of-trace-elements-in-breast-cancer-and-their-characterization-using-x-ray-fluorescence-technique.

(b) A chapter titled "Lab-scale Wavelength Dispersive X-Ray Fluorescence Spectrometer and Signal Processing Evaluation" in the book titled "X-Ray Fluorescence in Biological Sciences: Principles, Instrumentation and Applications" published by "John Wiley and Sons", ISBN: 9781119645719 (online) and 9781119645542 (Print)

*Harpreet Singh Kainth, Tejbir Singh, Gurjeet Singh, Devinder Mehta and* **Sanjiv Puri** April 2022, DOI: 10.1002/9781119645719.ch33

## (XII) Papers published in International peer reviewed Research Journals

Physical parameters for L X-ray production cross-sections.
 <u>Sanjiv Puri</u>, B. Chand, M.L. Garg, Nirmal Singh, J.H. Hubbell and P.N. Trehan
 X-ray Spectrometry 21 (1992) 171-174 (I.F. 1.29, ISSN: 1097-4539) (Citations: 14)

 Measurements of L X-ray fluorescence cross-sections and fluorescence yields for elements in the range 41≤Z≤52 at 5.96 keV.

R.R. Garg, *S. Puri*, S. Singh, D. Mehta, M.L. Garg, J.S. Shahi, N. Singh and P.N. Trehan **Nucl. Instrum. and Methd. B72** (1992) 147-152 (*IF 1.11, ISSN NO. 0168-583X*) (Citations: 59)

- 3. *M Shell x-ray production cross-sections and fluorescence yields for the elements with 71 ≤Z≤92 using 5.96 keV photons.*<u>Sanjiv Puri</u>
  D. Mehta, B. Chand, Nirmal Singh, P.C. Mangal, and P.N. Trehan;
  Nucl. Instrum. and Methd. B73 (1993) 319-323 (IF 1.11, ISSN NO. 0168-583X) (Citations: 38)
- Measurements of K to L shell vacancy transfer probabilities for the elements 37≤Z≤42.
   <u>Sanjiv Puri</u>, D. Mehta, B. Chand, Nirmal Singh and P.N. Trehan;
   Nucl. Instrum. and Methd. B73 (1993) 443-446 (IF 1.11, ISSN NO. 0168-583X) (Citations: 30)
- Measurements of L to M shell vacancy transfer probabilities for elements 70≤Z≤92.
   <u>Sanjiv Puri</u>, D. Mehta, B. Chand, Nirmal Singh and P.N. Trehan;
   Nucl. Instrum. and Methd. B74 (1993) 347-351 (IF 1.11, ISSN NO. 0168-583X) (Citations: 29)
- Production of L sub-shell and M shell vacancies following inner shell vacancy production.
   <u>Sanjiv Puri</u>
   D. Mehta, B. Chand, Nirmal Singh and P.N. Trehan;
   Nucl. Instrum. and Methd. B 83 (1993) 21-30 (IF 1.11, ISSN NO. 0168-583X) (Citations: 56)
- L shell fluorescence yields and Coster-Kronig transition probabilities for elements 25≤Z≤96.
   <u>Sanjiv Puri</u>, D. Mehta, B. Chand, Nirmal Singh and P.N. Trehan;
   X-ray Spectrometry 22 (1993) 358-361. (I.F. 1.29, ISSN: 1097-4539) (Citations: 256)
- 8. A review bibliography and tabulation of K, L and higher atomic shell X-ray fluorescence yields.

  J.H. Hubbell, P.N. Trehan, Nirmal Singh, B. Chand, M.L. Garg, D. Mehta, R.R. Garg, S. Singh and Sanjiv Puri;

  J. Phys. Chem. Ref. Data 23 (1994) 339-364. (I.F 4.2, ISSN NO. 0047-2689) (Citations: 660)
- 9. K and L shell X-ray fluorescence cross sections.

  Sanjiv Puri, B. Chand, D. Mehta, M. L. Garg, Nirmal Singh and P.N. Trehan;

Atom. Data and Nucl. Data Tables 61 (1995) 289-311. (*IF 2.57, ISSN No. 0092-640X*) (Citations: 118)

10. Urban air pollution source apportionment using a combination of aerosol and gas monitoring techniques.E. Swietlicki, <u>Sanjiv Puri</u> and H.C. Hansson;

Atmosphere Environment 30 (1996) 2795-2809. (<u>I.F 3.629</u>, ISSN NO.1352-2310) (Citations: 192)

- 11. An evaluation of the sources of air pollution in the city of Chandigarh, India A study using EDXRF technique. H.K. Bandhu, <u>Sanjiv Puri</u>, J.S. Shahi, D. Mehta, M.L. Garg, P.C. Mangal, Nirmal Singh, E. Swietlicki and P.N. Trehan; Nucl. Instrum. and Methd. B114 (1996) 341-344. (IF 1.11, ISSN NO. 0168-583X) (Citations: 21)
- 12. Differential Cross-section Measurements for the Elastic Scattering of 59.5 keV Photons by Elements in the Atomic Region 13≤Z≤82.

<u>Sanjiv Puri</u>, D. Mehta, B. Chand, Nirmal Singh and P.N. Trehan Nucl. Instrum. and Methd. B111 (1996) 209-214 (*IF 1.11, ISSN NO. 0168-583X*)

13. The L<sub>γ1,5</sub>, L<sub>γ2,3,6</sub>, L<sub>γ4</sub> and Lα and Lα XRF Cross sections for Elements with 71 ≤Z≤83 at 22.6 keV. <u>Sanjiv Puri</u>, D. Mehta, Nirmal Singh and P.N. Trehan

Phys. Rev. A 54 (1996) 617-623 (*IF 2.925*, *ISSN NO.1050-2947*) (Citations: 46)

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V. Vijavan, S.N. Behera, V.S. Ramamurthy, Sanjiv Puri, J.S. Shahi and Nirmal Singh
   X-ray Spectrometry 26 (1997) 65-68. (I.F. 1.29, ISSN: 1097-4539) (Citations: 75)
15. Elastic scattering of 22.1 keV photons by elements in the atomic region 12 \le Z \le 92.
   J.S. Shahi, Sanjiv Puri, D. Mehta, Nirmal Singh and P.N. Trehan;
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42. L<sub>3</sub> sub-shell X-ray production cross sections for 76Os at incident photon energies 10.9-12.7 keV using synchrotron photoionization method

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44. Low velocity O<sup>6+</sup> ion induced M<sub>i</sub> sub-shell X-ray production cross sections for 79Au, 82Pb and 83Bi

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45. Cross sections for production of the  $M_j$  (j=1-5) subshell X-rays of  $_{79}$ Au,  $_{82}$ Pb and  $_{83}$ Bi produced by 100 keV proton impact

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46. *M-shell x ray production cross sections by proton impact on* 81*Tl.* 

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47. Parameterization of Proton Induced K shell X-ray Production Cross Sections for Z = 22-40

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48. Measurements of L1 to L3 subshell Coster-Kronig transition probability for 66Dy

Rajnish Kaur, Anil Kumar, M. Czyzycki1, A. Migliori, A. G. Karydas and Sanjiv Puri

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49. Li (i=1-3) subshell X ray intensity ratios for  $_{66}$ Dy using synchrotron radiation

Rajnish Kaur, Anil Kumar, M. Czyzycki1, A. Migliori, A. G. Karydas and Sanjiv Puri

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50. M<sub>i</sub> (i=1-5) sub-shell X-ray production cross section measurements at photon energies in vicinity of the Lj (j=1-3) sub-shell absorption edge energies of 66Dy

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Shehla, A. Mandal, Ajay Kumar, M. Roy Chowdhury, L. C. Tribedi and Sanjiv Puri,

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52. Parameterization of Proton Induced K X-Ray Production Cross Sections for Z=42-70.

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55. Low energy N<sup>7+</sup> ion induced Mj sub-shell X-ray production cross sections for 79Au, 82Pb and 83Bi Shehla, Ajay Kumar, Anil Kumar, C. Bagdia, L.C. Tribedi and Sanjiv Puri NSRP-22, Nov. 8-10, 2019

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Shehla, Ajay Kumar, Anil Kumar, D. Swami and Sanjiv Puri

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57. Measurements of L X ray Intensity Ratios for 51Sb at Incident Photon Energies across its Li(i=1-3) Edge Energies Sandeep Kaur, Vibha Ayri, Anil Kumar, M. Czyzycki, A. G. Karydas and Sanjiv Puri Proc. AMRP-2020. (2020) 119

58. To investigate the universal behavior of  ${}^4He^{+q}$  ion induced M X-ray production cross sections

Balwinder Singh, Shehla and Sanjiv Puri

Proc. AMRP-2020, (2020) 120

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60. Influence of wave function on proton induced M XRP cross sections for 71Lu and 80Hg

Balwinder Singh, Anil Kumar and Sanjiv Puri

Proc. AMRP-2020, (2020) 125

61. Study of Energy Shift in Ly1 X-ray Emission Lines of Thallium Complexes

Harpreet Singh Kainth, Sanjiv Puri and Deeksha Khandewal

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- 62. Experimentally Revisited X-ray Fundamental Parameters at XRF beamline of Elettra Sincrotrone, Trieste A. G. Karydas, Vibha Ayri, Sandeep Kaur, M. Czyzycki, Giuliana Aquilanti, A. Migliori and Sanjiv Puri European conference on X-ray analysis (EXRS-2022), held in Bruges, Belgium during 26 June to 1 July 2022. https://www.uantwerpen.be/en/conferences/exrs/
- 63. *Influence of cascade vacancy decay on the average M-shell Fluorescence Yield for Rhenium* Vibha Ayri, Mateusz Czyzycki, Anil Kumar, Andreas Karydas, <u>Sanjiv Puri</u> European conference on X-ray analysis (EXRS-2022), held in Bruges, Belgium during 26 June to 1 July **2022**. https://www.uantwerpen.be/en/conferences/exrs/
- 64. *M X-ray production cross-sections in 81Pb and 83Bi induced by nitrogen ions*.

  Balwinder Singh, Shehla, Anil Kumar, Deepak Swami, Ajay Kumar and Sanjiv Puri

  7<sup>th</sup> International Conference on Ion beams in Materials Engineering and Characterization (**7-IBMEC**), at Inter University Accelerator Centre (IUAC), New Delhi on 16 19 November, 2022.
- 65. Measurements of Line Resolved M-shell X-ray Production Cross Sections for 79Au and 81Tl by N<sup>9+</sup> Ion Beam.

Balwinder Singh, Shehla, Anil Kumar, Deepak Swami, Ajay Kumar and <u>Sanjiv Puri</u> NAARRI International Conference NICSTAR-2023 held at Lulu Bolgatty International Convention Center (LBICC), Kochi, Kerala, India, on January 09-12, 2023.

66. L-shell Average Fluorescence Yield for 75Re using Synchrotron Raditation.

Vibha Ayri, Sandeep Kaur, Anil Kumar, M. Czyzycki, A.G. Karydas and <u>Sanjiv Puri</u>

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67. Synchrotron Radiation Induced L X-ray Intensity Ratios for 72Hf.

Harpreet Singh, Vibha Ayri, H. S. Kainth, A.G. Karydas and Sanjiv Puri,

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- 68. Influence of Multiple Ionization on M-shell Fluorescence and Coster-Kronig Yields of 79Au and 83Bi for Cabon Ion Impact,
  - Balwinder Singh and Sanjiv Puri
  - 23<sup>rd</sup> National Conference on "Atomic and Molecular Physics" at IIST, Trivandrum, Kerala, India, on February 20-23, 2023.
- 69. Influence of Multiple Ionization on M-shell Fluorescence and Coster-Kronig Yields of 70Yb for Nitrogen Ion Impact,
  - Balwinder Singh and Sanjiv Puri,
  - One Day National Seminr on Condensed Matter Physics and Materials at Punjabi University, Patiala, Punjab, India on 8<sup>th</sup> May.
- 70. Measurements of L X-ray Branching Ratios for 75Re at Incident Photon Energies across its L<sub>i</sub>(i=1-3) Edge Energies.
  - Vibha Ayri, Sandeep Kaur, Harpreet Singh, Anil Kumar, M. Czyzycki, A.G. Karydas and <u>Sanjiv Puri</u> One Day National Seminr on Condensed Matter Physics and Materials *at Punjabi University, Patiala, Punjab, India on 8th May*.
- 71. Measurements of Mass-Attenuation Coefficients for 51Sb at Photon Energies across its L3 Sub-Shell Absorption Edge.
  - Sandeep Kaur, Vibha Ayri, Anil Kumar, M. Czyzycki, A.G. Karydas and Sanjiv Puri.
  - One Day National Seminr on Condensed Matter Physics and Materials at Punjabi University, Patiala, Punjab, India on 8<sup>th</sup> May.
- 72. Study of Multiple Ionization Effects on Nitrogen Ion Induced M X-Ray Emission for 82Pb and 83Bi, Balwinder Singh and Sanjiv Puri
  - 6<sup>th</sup> National Conference on Advanced Materials and Radition Physics (AMRP-2023) at SLIET Longowal, Punjab, India, on 18-19 May.
- 73.  $M_j(j=1-5)$  Sub-shell Vacancy Distribution Produced Following Decay of  $L_i(i=1-3)$  Subhell Vacancies, Vibha Ayri, Sandeep Kaur, Anil Kumar, M. Czyzycki, A.G. Karydas and **Sanjiv Puri** 6<sup>th</sup> National Conference on Advanced Materials and Radition Physics (AMRP-2023) at SLIET Longowal, Punjab, India, on 18-19 May.
- 74. *Measurements of LM Resonant Raman Scattering Cross Sections for Sn using Synchrotron Radiation*. Sandeep Kaur, Vibha Ayri, Anil Kumar, M. Czyzycki, A.G. Karydas and **Sanjiv Puri** 6<sup>th</sup> National Conference on Advanced Materials and Radition Physics (AMRP-2023) at SLIET Longowal, Punjab, India, on 18-19 May.
- 75. Average fluorescence yields for 50Sn and 51Sb.
  Anil Kumar, Vibha Ayri, Sandeep Kaur, M. Czyzycki, A. G. Karydas and Sanjiv Puri.
  6th National Conference on Advanced Materials and Radition Physics (AMRP-2023) at SLIET Longowal, Punjab, India, on 18-19 May.
- 76. Measurements of 72Hf L3-subshell fluorescence yield using synchrotron radiation.
  - Harpreet Singh, Vibha Ayri, A. G. Karydas and Sanjiv Puri.
  - 6<sup>th</sup> National Conference on Advanced Materials and Radition Physics (AMRP-2023) at SLIET Longowal, Punjab, India, on 18-19 May.

## (XIV) Symposia/workshops and Orientation /Refresher courses/Summer Schools attended:

## (a) Symposia/Conferences/workshops attended

#### (i) National

- (1) <u>National workshop</u> on Atomic physics with high energy heavy ions held at Banaras Hindu University, Varanasi from April 18-20, 1994.
- (2) <u>National Symposium</u> on radiation physics (NSRP-11) held at Punjabi University, Patiala from 26-29 Oct., 1995.
- (3) <u>National workshop</u> on "Regional PIXE Facility" sponsored by DST, N.Delhi, held at Panjab University, Chandigarh in Sept., 1999.
- (4) <u>National Seminar</u> on "Material Science: Trends and Future" MSTF-2000 held at SLIET, Longowal, Sangrur (Distt.) on 24-25 Feb., 2000.
- (5) <u>National workshop</u> on "15 UD pelletron facility at Chandigarh" sponsored by DST, N.Delhi, held at Panjab University, Chandigarh in July, 2000.
- (6) <u>National seminar</u> on "Computational techniques in physics" held at department of physics Panjab University, Chandigarh on 6-7 March, 2002.
- (7) <u>Punjab Science Congress</u> of the Punjab Academy of Sciences held at SLIET, Longowal from 7-9 Feb., 2003.
- (8) <u>National symposium</u> on Radiation measurements and applications (NSRMA) held at Punjabi University, Patiala during Nov., 2004.
- (9) <u>National conference</u> on "Lasers, smart materials and radiation physics" (LSRP-2006) held at SLIET, Longowal during March 17-18, 2006.
- (10) <u>Symposium</u> on "Radiation Sources, Detection and Applications" (SRSDA07) held at Punjabi University, Patiala during Feb. 5-6, 2007.
- (11) *National Symposium* on "Radiation and Materials" (NSRM08) held at department of Physics, Punjabi University, Patiala during March 10-11, 2008.
- (12) Attended *National Conference* on "Advanced Materials and Radiation Physics (AMRP09)" held at SLIET, Longowal during March 09-10, 2009.
- (13) Attended Indian Nuclear Society <u>National Seminar</u> on "Nuclear Technology for Sustainable development" (NTSD-09) held at Thapar University, Patiala during October 10-11, 2009.
- (14) Attended *National conference* on "X-ray fluorescence 2010" (XRF2010) held at Saha Institute of Nuclear Physics (SINP), Kolkata during 12-15 Jan., 2010.
- (15) Attended <u>National Symposium</u> on "Radiation Physics and Nanomaterials" (NSRPN-11) held at Department of Physics, Punjabi University, Patiala during Feb. 4-5, 2011.
- (16) Attended 14th Punjab Science Congress (PSC-14) held at SLIET, Longowal during Feb. 7-9, 2011.
- (17) Attended <u>National Conference</u> on "Advanced Materials and Radiation Physics (AMRP-11)" held at SLIET, Longowal during Nov. 4-5, 2011.
- (18) Attended <u>International Conference</u> on Emerging Trends in Physics for Environmental monitoring and management (ETPEMM-12) held at Department of Physics, Punjabi University, Patiala during Dec. 17-19, 2012.
- (19) Attended 3<sup>rd</sup> National Conference on Advanced Materials and Radiation Physics (AMRP-2013) held at SLIET, Longowal during Nov., 22-23, 2013.
- (20) Attended 4<sup>th</sup> National Conference on Advanced Materials and Radiation Physics (AMRP-2015) held at SLIET, Longowal during March 13-14, 2015.
- (21) Attended 5<sup>th</sup> *National e-Conference* on "Advanced Materials and Radiation Physics (AMRP-2020)" held at SLIET, Longowal during Nov. 9-11, 2020.
- (22) Attended 6<sup>th</sup> *National Conference* on "Advanced Materials and Radiation Physics (AMRP-2023)" held at SLIET, Longowal during May 18-19, 2023.

#### (ii) International

Attended <u>INDO-US workshop</u> on "New Directions in the study of interactions of Energetic photons with matter" sponsored by DST, India and NSF, USA held at University of North Bengal, Darjeeling from 22-27 March, 2004.

## (b) International Summer School attended:

<u>One month summer school</u> on "Synchrotron Radiations" held at *The Abdus Salam International Center for Theoretical Physics, Trieste, Italy* during 19 April-22 May, 1999.

## (c) Orientation /Refresher/short-term courses attended:

- (1) Orientation course at Academic staff college, Panjab University, Chandigarh in Dec., 1996.
- (2) <u>Two Refresher courses</u> in **Physics** held at Panjab University, Chandigarh in July, 1998 and June, 2001, respectively.
- (3) <u>Short term course</u> on "Optical fiber and its applications" held at NITTTI, Sec-26, Chandigarh during Jan., 2004.
- (4) Short term course on "Lasers and its applications" held at NITTTI, Sec-26, Chandigarh during June, 2004.
- (5) Short term course on "Nanoparticles and their applications" held at NITTTR, Chandigarh from Nov., 2007.

Date: 20-09-2023 Sanjiv Puri