

Curriculum Vitae

1. **Name** : Sanjiv Puri
2. **Designation** : Professor (Physics)
3. **Department** : Basic and Applied Sciences
4. **Date of Birth** : May 31, 1967
5. **Address for Correspondence** : Punjabi University, Patiala-147002
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6. **Areas of Specialisation** : Experimental Atomic Physics (Photon-atom interactions / Ion-atom collisions / Elemental analysis using EDXRF and PIXE techniques).

7. Academic Qualifications

Sr. No.	Degree	Year	Board/Univ.	Marks (%)	Division	Subjects Studied
1	B.Sc.	1986	PU, Chd.	70%	I st	Phys., Chem., Maths
2	M.Sc.	1988	PU, Chd.	63%	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- Dec., 1992	Junior Research Fellow (Awarded by UGC, N. Delhi)	Dept. of Physics, Panjab University, Chandigarh-160014, India.
2.	Jan.-Aug., 1993	Visiting Scientist (Awarded by International Science Programs, Uppsala, SWEDEN.)	Dept. of Nuclear physics, University of Lund, Lund, Sweden.
3.	Sept., 1993 - Sept., 1994	Senior Research Fellow (Awarded by UGC, N. Delhi)	Dept. of Physics, Panjab University, Chandigarh-160014, India.
4.	Nov., 1998 - Feb., 1999	Visiting Scientist (Awarded by Punjab State Council for Science and Technology (PSCST) Under <i>Young Scientist Fellowship</i> scheme, Punjab, India)	Dept. of Physics, Panjab University, Chandigarh-160014, India.
5.	June-July 2002	Visiting Scientist (Awarded by Indian National Science Academy (INSA), N. Delhi, India)	Dept. of Physics, Panjab University, Chandigarh-160014, India.

9. Membership of Professional Bodies/Organisations

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

10. Citations of Research publications

	As per SCOPUS	As per Research Gate	As per Google Scholar
Citations	1757	1834	2138
h-index	22	-	23
i10	-	-	38

11. Details of Employment

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

12. Administrative / Academic Experience

- ❖ 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.
- ❖ Chairman, Administrative Committee of department (ACD) Sept. 2013 to June, 2018.
- ❖ Member, Administrative Committee of department (ACD) Sept. 2013 onwards.
- ❖ Chairman, “Board of studies in Basic and Applied Sciences” Punjabi Univ. from July, 2014 to July, 2018.
- ❖ Member, “Board of Studies in Basic and Applied Sciences” Punjabi Univ. from July, 2014 onwards.
- ❖ Subject expert, “Board of Post-Graduate studies in Physics”, Punjabi Univ., Jan. 2015-Dec. 2016
- ❖ Subject expert, “Board of Under-Graduate studies in Physics”, Punjabi Univ., during Jan. 2015-Dec. 2016.
- ❖ Member, ACADEMIC COUNCIL, Punjabi Univ. for session 2015-16.
- ❖ Co-Coordinator, B. Tech. Admission Committee for 2014-15
- ❖ Coordinator, B. Tech. Admission Committee for 2015-16.
- ❖ Co-Coordinator, Central Admission Cell, Punjabi Univ. for admissions during 2016-17.
- ❖ Program Coordinator, Five Year Integrated M.Sc. programme in Physics (Honours School), 2019-20.
- ❖ Member, BPSAR, Faculty of Engg. & Tech., Punjabi Univ., Patiala from Nov. 2013 to June 2018.
- ❖ 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.
- ❖ Member, Departmental Research Board (DRB), “Department of Physics”, Punjabi Univ. since July, 2014
- ❖ “VC Nominee” in different selection committees for appointments of Assistant Professors in Univ. affiliated colleges.
- ❖ Member / Convener of different committees constituted by Punjabi Univ. for inspection of affiliated colleges.
- ❖ Member of different Selection / Screening cum evaluation committees constituted by Punjabi Univ. for appointments / promotions of teaching faculty.
- ❖ Convener / Member of various departmental committees (fee-concession committee, anti-ragging committee and different purchase committees) constituted from time to time since 2006
- ❖ Member, Academic Board at SLIET, Longowal during 2002-2004.
- ❖ Member of various committees of SLIET, Longowal constituted to organize Mega events as National Seminar on Materials Science-Trends and Future (2000), TECHFEST-(2002, 2003 and 2004), Punjab Science Congress (2003) and departmental Accreditation by AICTE.

13. List of Courses/papers taught

S. No.	Paper	Class
1.	Modern Physics	B. Tech.-I
2.	Applied Physics I & II	B. Tech.-I
3.	Nuclear Physics	M. Sc. (Physics)-I
4.	Applied X-ray Spectrometry	M. Sc. (Applied Physics)-II
5.	Experimental techniques in Physics	Ph.D. (Physics) course work
6.	C programming and Numerical methods (Lab course)	FYI M.Sc. Physics-I

14. Research Profile

(i) Published Work (Please specify numbers only)

- (a) Research Papers in International Journals: 71
- (b) Research Papers presented in Conference/Symposia: 56
- (c) Books (Original): 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.

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

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 $L_i(i=1-3)$ 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 4th 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 Short term course (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 **63rd Accelerator Users workshop** held at Inter-University Accelerator Centre, 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 **64rd 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 headquarters 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.

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

S. No.	Name of the Student	Title of Thesis	Year of Completion / Registration
1.	Mr. Yogeshwar Chauhan	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.	2019
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 absorption-edges of some heavy elements	Registered Aug., 2019
6.	Ms. Sandeep Kaur	Investigation of fundamental parameters for photon-atom interaction processes at energies near absorption-edges of some medium Z elements	Registered Aug., 2019
7.	Mr. Balwinder Singh	Investigation of charged particle induced atomic inner-shell ionization processes in some heavy elements	Registered Aug., 2019

(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 onwards

(VI) Overseas visits for research purposes

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

(VII) Visits to National Research Laboratories

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

(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 / γ -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 in India and 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.”
- “Canadian J. of Physics”
- “Journal of Electron spectroscopy and Related Phenomenon”
- “Heliyon”
- “American Mineralogist”

(X) List of Books / Research Papers 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 and the A.M.I.E students

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 has been written for a one or two semester *foundation course in Physics* being offered to the Engineering (B.E / B.Tech.) students at the undergraduate level. This textbook will also be useful for the students appearing for Graduate Aptitude Test for Engineering (GATE), the A.M.I.E students and those appearing in the National Education Test (NET) being conducted by UGC-CSIR.

CONTENTS

Section I: Simple Harmonic Oscillations / Damped Harmonic Oscillations / Forced Oscillations / Ultrasonic Waves. **Section II:** Interference of Light / Diffraction of Light / Resolving Power of Optical Instruments / Polarization of Light / Lasers and Their Applications / Optical Fibers. **Section III:** Scalar and Vector Fields / Maxwell Equations / Electromagnetic Waves. **Section IV:** Special Theory of Relativity / Introduction to Quantum Physics / Quantum Mechanics / Basics of Quantum Computations / Statistical Physics. **Section V:** Radioactivity and Its Applications / X-rays and Their Applications / Radiation Interaction with Matter / Basic Principles of Radiation Detectors. **Section VI:** Crystal Physics / Physics of Semiconductors / Dielectric Materials / Magnetic Materials / Superconductors / Nanoparticles.

(XI) Papers published in International peer reviewed Research Journals

1. *Physical parameters for L X-ray production cross-sections.*
Sanjiv Puri, 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: 13)
2. *Measurements of L X-ray fluorescence cross-sections and fluorescence yields for elements in the range $41 \leq Z \leq 52$ 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: 56)
3. *M Shell x-ray production cross-sections and fluorescence yields for the elements with $71 \leq Z \leq 92$ using 5.96 keV photons.*
Sanjiv Puri, 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)
4. *Measurements of K to L shell vacancy transfer probabilities for the elements $37 \leq Z \leq 42$.*
Sanjiv Puri, 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)
5. *Measurements of L to M shell vacancy transfer probabilities for elements $70 \leq Z \leq 92$.*
Sanjiv Puri, 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)
6. *Production of L sub-shell and M shell vacancies following inner shell vacancy production.*
Sanjiv Puri, 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)
7. *L shell fluorescence yields and Coster-Kronig transition probabilities for elements $25 \leq Z \leq 96$.*
Sanjiv Puri, 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: 228)
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. (LF 4.2, ISSN NO. 0047-2689) (Citations: 549)

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: 112)
10. *Urban air pollution source apportionment using a combination of aerosol and gas monitoring techniques.*
 E. Swietlicki, Sanjiv Puri and H.C. Hansson ;
Atmosphere Environment 30 (1996) 2795-2809. (I.F 3.629, ISSN NO.1352-2310) (Citations: 170)
11. *An evaluation of the sources of air pollution in the city of Chandigarh, India - A study using EDXRF technique.*
 H.K. Bandhu, Sanjiv Puri, 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 $13 \leq Z \leq 82$.*
Sanjiv Puri, 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 $L_{\gamma 1,5}$, $L_{\gamma 2,3,6}$, $L_{\gamma 4}$ and $L\alpha$ and $L\alpha$ XRF Cross sections for Elements with $71 \leq Z \leq 83$ at 22.6 keV.*
Sanjiv Puri, D. Mehta, Nirmal Singh and P.N. Trehan
Phys. Rev. A 54 (1996) 617-623 (IF 2.925, ISSN NO.1050-2947) (Citations: 46)
14. *Elemental composition of fly ash from a coal fired thermal power plant - A study using PIXE and EDXRF.*
 V. Vijayan, 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: 68)
15. *Elastic scattering of 22.1 keV photons by elements in the atomic region $12 \leq Z \leq 92$.*
 J.S. Shahi, Sanjiv Puri, D. Mehta, Nirmal Singh and P.N. Trehan ;
Phys. Rev. A 55 (1997) 3557-3565 (IF 2.925, ISSN NO.1050-2947) (Citations: 20)
16. *Monitoring of urban air pollution using EDXRF technique.*
 H.K. Bandhu, Sanjiv Puri, M.L. Garg, J.S. Shahi, D. Mehta, P.C. Mangal, Nirmal Singh and P.N. Trehan
Radiat. Phys.Chem. 5 (1998) 625-626 (IF 1.20, ISSN No. 0969-806X)
17. *Elemental analysis of polymetallic manganese nodules from Central Indian Basin - A study using EDXRF technique.*
Sanjiv Puri, J.S. Shahi, B. Chand, M.L. Garg, Nirmal Singh, P.N. Trehan and N. Nath
X-ray Spectrometry 27 (1998) 105-110 (I.F. 1.29, ISSN: 1097-4539).
18. *Large angle elastic scattering of 59.54 keV photons by elements with $12 \leq Z \leq 92$.*
 J.S. Shahi, Sanjiv Puri, D. Mehta, Nirmal Singh and P.N. Trehan ;
Phys. Rev. A 57 (1998) 4327-4334. (IF 2.925, ISSN NO.1050-2947) (Citations: 26)
19. *Photon induced L x-ray production differential cross sections in Th at 22.6 keV.* Sanjiv Puri, D. Mehta, J.S. Shahi,
 M.L. Garg, Nirmal Singh, P.N. Trehan ;
Nucl. Instrum. and Methods B 152 (1999) 19 (IF 1.11, ISSN NO. 0168-583X) (Citations: 23)
20. *Angular-dependence of L x-ray production cross sections in uranium at 22.6- and 59.5-keV photon energies.*
 D. Mehta, Sanjiv Puri, Nirmal Singh, M.L. Garg, P.N. Trehan;
Phys. Rev. A 59 (1999) 2723 (IF 2.925, ISSN NO.1050-2947) (Citations: 54)
21. *Angular dependence of L X-ray emission in Pb following photoionisation at 22.6 and 59.5 keV.*
 Ajay Kumar, Sanjiv Puri, D. Mehta, M.L. Garg and Nirmal Singh ;
J. Phys. B 32 (1999) 3701 (IF 1.792, ISSN NO. 0953-4075) (Citations: 30)
22. *Elemental composition and sources of air pollution in city of Chandigarh, India, using EDXRF and PIXE techniques.*
 H.K. bandhu, Sanjiv Puri, M.L. Garg, B.Singh, J.S. Shahi, D.Mehta, Erik Swiet;icki, D.K. Dhawan and Nirmal Singh ;
Nucl. Instrum. and Methds. B 160 (2000) 126 (IF 1.11, ISSN NO. 0168-583X) (Citations: 60)
23. *K and L x-ray production cross sections and intensity ratios of rare earth elements for proton impact in the energy range 20-25 MeV.*
 M. Hajivaliei, Sanjiv Puri, M.L. Garg, D.Mehta, A. Kumar, K.P. Singh, Nirmal Singh and I.M. Govil.
Nucl. Instrum. and Methds. B 160 (2000) 203 (IF 1.11, ISSN NO. 0168-583X) (Citations: 26)
24. *L X-ray production cross sections for Th and U at 17.8, 25.8 and 46.9 keV photon energies.*
 Ajay Kumar, Sanjiv Puri, J.S. Shahi, M.L. Garg, D. Mehta and Nirmal Singh ;
J. Phys. B 34 (2001) 613 (IF 1.792, ISSN NO. 0953-4075) (Citations: 27)
25. *Incoherent scattering of 59.5 keV photons by elements with $13 \leq Z \leq 82$.*
 J.S. Shahi, Ajay Kumar, D. Mehta, Sanjiv Puri, M.L. Garg and Nirmal Singh.
Nucl. Instrum and Methd. B 179 (2001) 15 (IF 1.11, ISSN NO. 0168-583X) (Citations: 33)
26. *Angular dependence of L_3 x-ray emission following L_3 sub-shell photo-ionisation in Pb.*
 Ajay Kumar, M.L. Garg, Sanjiv Puri, D. Mehta and Nirmal Singh
X-Ray Spectrometry 30 (2001) 287 (I.F. 1.29, ISSN: 1097-4539)
27. *Large-angle elastic scattering of 88.03 keV photons by elements with $30 \leq Z \leq 92$.*
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Shehla, Ajay Kumar, Anil Kumar, C. Bagdia, L.C. Tribedi and **Sanjiv Puri**
NSRP-22, Nov. 8-10, 2019
56. *M X-ray relative intensities for ^{70}Yb by C ion impact*
Shehla, Ajay Kumar, Anil Kumar, D. Swami and **Sanjiv Puri**
NSRP-22, Nov. 8-10, 2019

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

(a) Symposia/Conferences/workshops attended

(i) National

- (1) *National workshop* on Atomic physics with high energy heavy ions held at Banaras Hindu University, Varanasi from April 18-20, 1994.
- (2) *National Symposium* on radiation physics (NSRP-11) held at Punjabi University, Patiala from 26-29 Oct., 1995.
- (3) *National workshop* on “Regional PIXE Facility” sponsored by DST, N.Delhi, held at Panjab University, Chandigarh in Sept., 1999.
- (4) *National Seminar* on “Material Science: Trends and Future” MSTF-2000 held at SLIET, Longowal, Sangrur (Distt.) on 24-25 Feb., 2000.
- (5) *National workshop* on “15 UD pelletron facility at Chandigarh” sponsored by DST, N.Delhi, held at Panjab University, Chandigarh in July, 2000.
- (6) *National seminar* on “Computational techniques in physics” held at department of physics Panjab University, Chandigarh on 6-7 March, 2002.
- (7) *Punjab Science Congress* of the Punjab Academy of Sciences held at SLIET, Longowal from 7-9 Feb., 2003.
- (8) *National symposium* on Radiation measurements and applications (NSRMA) held at Punjabi University, Patiala during Nov., 2004.
- (9) *National conference* on “Lasers, smart materials and radiation physics” (LSRP-2006) held at SLIET, Longowal during March 17-18, 2006.
- (10) *Symposium* 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 National Seminar 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 National Symposium 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.
Attended National Conference on “Advanced Materials and Radiation Physics (AMRP-11)” held at SLIET, Longowal during Nov. 4-5, 2011.
- (17) Attended 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.
- (18) Attended 3rd National Conference on Advanced Materials and Radiation Physics (AMRP-2013) held at SLIET, Longowal during Nov., 22-23, 2013.
- (19) Attended 4th National Conference on Advanced Materials and Radiation Physics (AMRP-2015) held at SLIET, Longowal during March 13-14, 2015.

(ii) International

Attended INDO-US workshop 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:

One month summer school 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) Two Refresher courses in **Physics** held at Panjab University, Chandigarh in July, 1998 and June, 2001, respectively.
- (3) Short term course 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 NITTTTR, Chandigarh from Nov., 2007.

Date: 08-05-2020

Sanjiv Puri