

# Bio-data of Prof. B.L. Ahuja

- **Name** : Prof. (Dr.) B. L. Ahuja
- **Designation** : Professor of Physics,  
Chairman, Faculty of Science  
and Dean, University College  
of Science.



- **Date of Birth** : 08.07.1961
- **Address** : Department of Physics  
University College of Science  
M L Sukhadia University  
Udaipur (Raj.).

- **Permanent Address** : 3A/E, New Keshav Nagar  
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- **Area of Specialization** : Condensed Matter Physics, Environmental Physics, X-ray scattering, Electronic properties, Band structure calculations (HF, DFT, Pseudopotential, APW, FL APW, KKR etc.), Magnetism, Solar Cells, Solar Energy, Computational Physics

## Abstract of Bio-data

*Prof. B.L. Ahuja is diligently engaged in the field of Compton scattering, X-ray fluorescence, magnetism, engineering of materials for an array of applications (like solar cells, computer hard ware, spintronics materials, etc.) and band structure calculations. He was awarded the prestigious BOYSCAST fellowship (1992-93) by DST, New Delhi to work at University of Warwick, U.K. for development of instrumentation for synchrotron radiations.*

**Prof. Ahuja is the only Indian Scientist who has designed, fabricated and commissioned the first Indian 20 Ci <sup>137</sup>Cs Compton spectrometer and the first-ever lowest intensity 100 mCi <sup>241</sup>Am Compton spectrometer in M.L. Sukhadia University, Udaipur, Rajasthan.** For the measurement of high resolution and magnetic Compton profiles, he has worked at Universite de Paris-sud (LURE), France; Daresbury Synchrotron Source, U.K.; KEK, Japan; European Synchrotron Radiation Facility (ESRF), Grenoble, France and Super Photon Ring 8 GeV (SPring-8), Japan.

*Prof. Ahuja has supervised 27 students for their Ph.D. degree and presently 8 students are working with him for the same. Prof. Ahuja has executed several R&D projects funded by DST, CSIR, UGC, AICTE, UGC-DAE-CSR, BRNS and DRDO, etc. Prof. Ahuja has completed his tenure as Head of Physics Department, Director, University Computer Centre and Coordinator of DST-FIST (level-2) programme. Presently he is Chairman, Faculty of Science and Dean, University College of Science and Coordinator of UGC-DSA-II phase programme.*

*Prof. Ahuja was also member of DST (New Delhi) WOS-A Expert Committee to sanctioned the Research Grant to Women Scientists and presently he is Co-opted Expert Member of DST- Young Scientist Committee on Physical and Mathematical Sciences. Prof. Ahuja has contrived working collaborations with 33 renowned institutes within India and abroad. He has published about 161 papers in very reputed international journals (highest impact factor up to 9.446) and about 157 publications in conference proceedings, etc. In addition, Prof. Ahuja is also a reviewer of several topmost international journals (like PRB, PRL, APL, Elsevier journals) and is associated with many scientific societies in different capacities.*

• **Academic Qualifications:**

M.Sc.	University of Rajasthan, Jaipur	Physics	1983
Ph.D.	University of Rajasthan, Jaipur	Physics Field: Compton scattering	1988

• **Awards:**

- (i) **Honored as International Scientist by Late Sundar Singh Bhandari Trust, Udaipur on April 13, 2017 (State level award).**
- (ii) **BOYSCAST fellowship, 1992-93 by Government of India (To work in U.K. for one year). First such fellowship in Rajasthan state.**
- (iii) **Honour of "Chartered Physicist" from Institute of Physics, London (1994).**
- (iv) **Best Citizen of India, 2006 by Best Citizen Publishing House, New Delhi**

• **Research achievements:**

- (a) **First Indian Scientist** to develop 20 Ci  $^{137}\text{Cs}$  Compton spectrometer.
- (b) **First-ever Scientist** to develop first ever 100 mCi  $^{241}\text{Am}$  Compton spectrometer.
- (c) **First Indian Scientist** to work on high resolution Compton spectroscopy.
- (d) **First Indian Scientist** to undertake magnetic Compton profile measurements.
- (e) **Developed gamma-ray environmental set-up.**
- (f) **Developed band structure laboratory.**

• **Scientific Publications: About 318 (list enclosed)**

• **Books/chapters: 05**

1. Recent Trends in Radiation Physics Research, Himanshu Publications, Udaipur (2010). ISBN No. 978-81-7906-227-2 (Editor)
2. Physics Practical (for Engineering and B.Sc. Students), Student Book Co., Jaipur (1991) (Author)
3. Raj. Board, XII Physics Part II, Raj. Board, Ajmer (2003 and revised in 2004) (Author)
4. Compton Spectroscopy and Electronic Properties of Materials (collected 100 + scientific publications of Prof. B. L. Ahuja) Volumes I, II and III (Edited by group members) Himanshu Publications, Udaipur (2013).
5. Compton Scattering in “Reference Module in Materials Science and Materials Engineering”, Elsevier, UK publication, pp 1-8 (2016) (Contributed Chapter)

• **Referee of several international journals published in India and abroad, and Reviewer of several theses, research projects and research papers.**

*For example,*

worked as a Reviewer/Referee of several International Peer Reviewed Scientific Journals like Applied Physics Letters (USA), Physica Status Solidi (b) (Germany), Physical Review Letters (USA), Phys. Rev. B. (USA), Advanced Materials Research (Switzerland), Pramana-J. Phys. (India), Applied Radiation and Isotopes (Elsevier), Solid State Communication (Elsevier), Materials Letters (Elsevier), Material Science and Engineering B (Elsevier), Materials Chemistry and Physics (Elsevier), J. of Physics and Chemistry of Solids (Elsevier), Annals of Nuclear Energy (Elsevier), Vacuum (Elsevier), Physica B (Elsevier), J. Alloys and Compounds (Elsevier) and so on.....

• **Foreign visits for research work:**

Place of visit	Title of collaborative experimental/theoretical work undertaken
1.. SPring8, Hygo, Japan* (Jan. 18-25, 2012). Thereafter, <b>Ph.D. students visits for collaborative research work.</b>	Observation of temperature dependent orbital degree of freedom of a transition metal (T) doped $\text{La}_{0.7}\text{Ca}_{0.3}\text{Mn}_{1-x}\text{T}_x\text{O}_3$ manganites by magnetic Compton Scattering. <b>(Experimental work)</b>
2. SPring8, Hygo, Japan (July 18-23, 2010)	A study of gigantic change in magnetic transitions in bulk and thin films of $\text{La}_{1-x}\text{Ca}_x\text{MnO}_3$ manganite by magnetic Compton scattering <b>(Experimental work)</b>
3. SPring8, Hygo, Japan (Feb. 17-23, 2010)	Study of metal-insulator transition in Ni doped perovskites $\text{LaFeO}_3$ and $\text{PrFeO}_3$ using magnetic Compton scattering <b>(Experimental work)</b>

4. SPring8, Hyogo, Japan (Feb. 12-17, 2009)	Origin of magnetism in multiferroic materials using Compton scattering. <b>(Experimental work)</b>
5. SPring8, Hyogo, Japan (Feb. 2-7, 2008)	Origin of martensitic transition and ferromagnetism in shape memory alloy $Mn_2NiGa$ using magnetic Compton scattering <b>(Experimental work)</b>
6. Institute of High Performance Computing, Singapore (July 6-9, 2006)	FP-LAPW code for band structure calculations <b>(Theoretical work)</b>
7. SPring8, Hyogo, Japan (Nov. 26-28, 2005)	Magnetic moments in $Ni_2MnGa$ : A magnetic Compton study <b>(Experimental work)</b>
8. SPring8, Hyogo, Japan (May 26-30, 2003)	Study of magnetic instability in $CeF_2$ on substitution of Ir/Ru magnetic Compton scattering <b>(Experimental work)</b>
9. SPring8, Hyogo, Japan (April 3-10, 2002)	Magnetic Compton profiles of fcc Co in high temperature phase and fcc $Fe_{50}Ni_{50}$ <b>(Experimental work)</b>
10. SPring8, Hyogo, Japan (June 4-14, 1999)	Magnetic Compton profiles of $CeF_2$ and $CeRu_2$ based compounds: phase I <b>(Experimental work)</b>
11. European Synchrotron Radiation Facility (ESRF), Grenoble, France (Dec. 9-18, 1997)	High resolution Compton scattering study of $Nb_{0.50}Mo_{0.50}$ <b>(Experimental work)</b>
12. European Synchrotron Radiation Facility (ESRF), Grenoble, France (during May and Nov. 1997)	To measure magnetic Compton profiles (Pd-Co system) and high resolution Compton profiles (Nb and Nb-Mo) <b>(Experimental work)</b>
13. KEK, Japan (during March-April 1996)	Low angle x-ray scattering <b>(Experimental work)</b>
14. Daresbury (Synchrotron), U. K. (during 1993)	Storage Ring and magnetic Compton scattering <b>(Experimental work)</b>
15. Universite de Paris-sud (LURE) France (during May-June 1993)	Synchrotron radiation based Compton scattering experiments <b>(Experimental work)</b>
16. Universite de Paris-sud (LURE) France (during March-April, 1993)	Synchrotron radiation based Compton scattering experiments <b>(Experimental work)</b>

17. University of Warwick, U.K. (Nov. 5, 1992 to Nov. 3, 1993)	X-ray and Gamma-ray experiments with detectors and instrumentation development for synchrotron sources; Post-Doctoral (Visiting Fellow) under BOYSCAST Scheme of DST, New Delhi <b>(FIRST BOYSCAST FELLOW IN RAJASTHANSTATE)</b>
*SPring-8, Japan is the best synchrotron radiation source in the world.	

• **Teaching experience:**

About 29yrs

Employer	Post held	Pay scale (Rs.)	Basic Pay (Rs.)	Period of Employment	
				From	To
(1) M L Sukhadia Univ., Udaipur	(a) Professor	37,400-67,000+ AGP 10,000/-	More than 70,000/-	17.5.2007	Contd...
	(b) Associate Professor	12000 – 420 – 18300	15,780/-	21.8.1997	16.5.2007
(2) M. Regional Engg. College, Jaipur (Presently MNIT)	Lecturer	2200 – 4000		1.11.1989	20.8.1997
(3) Worked at Univ. of Warwick, Coventry, U.K.	Post-Doctoral (Visiting Fellow) BOYSCAST Scheme of DST, New Delhi			5.11.1992 (on leave from MREC)	3.11.1993
(4) University of Rajasthan, Jaipur	Asstt. Prof.	700 – 1600		21.9.1988	31.10.1989
(5) M L Sukhadia University, Udaipur	Asstt. Prof.	---do---		30.7.1988	20.9.1988
(6) Univ. of Jodhpur, Jodhpur	Asstt. Prof.	---do---		17.7.1987	26.4.1988

(7) Govt. College, Nagaur	Lecturer	UGC scale		17.7.1984	8.9.1984
(8) Govt. College, Kotputli	Lecturer	UGC scale		19.1.1984	5.5.1984

• **Membership of scientific societies:**

1. Institute of Physics, London (*Honour of "Chartered Physicist" awarded*)
2. Indian Association of Physics Teachers
3. Indian Association of Crystal Growth
4. Indian Soc. for Technical Education
5. Indian Society for Atomic and Molecular Physics
6. Indian Society of Radiation Physics (*Vice President for four years*)
7. Rajasthan Science Congress Association
8. Indian Association of Nuclear Chemist and Allied Sciences
9. Materials Research Society of India

• **Working collaborations with various institutes (through joint research publications/experiments/projects):**

1. University of Warwick, UK.
2. University of Warsaw (Bialystok), Poland
3. University of Helsinki, Finland
4. University of Bristol, UK
5. Universite Paris-sud, France
6. Northeastern University, USA
7. European Synchrotron Radiation Facility, France
8. Academy of Mining and Metallurgy, Poland
9. University of Portsmouth, UK
10. Gunma University, Japan
11. Himeji Institute of Technology, Japan
12. Japan Synchrotron Radiation Research Institute, Japan
13. University of Rajasthan, Jaipur
14. Centre for Advance Technology, Indore
15. Sardar Patel University, Vallabh-Vidyanagar
16. IUC-DAE, Indore
17. Feroze Gandhi College, Rae Bareli (U.P.)
18. Malviya National Institute of Technology, Jaipur
19. IIT, Kharagpur
20. University of Uppsala, Sweden
21. University of Kota, Kota
22. Michigan Technological University, USA

23. University of Goa, Goa
24. IIT, Guwahati
25. National Institute of Technology, Hamirpur
26. Govt. Women Engg. College, Ajmer
27. University of Tikrit, Iraq
28. University of Calicut, Kerala
29. Universite' de Pau et des Pays de l'Adour, France
30. Bhabha Atomic Research Centre, Mumbai
31. Dipartimento di Fisica, Universita degli Studi di Trento, Trento, Italy.
32. Manipal University, Jaipur
33. UM-DAE Centre for Excellence in Basic Sciences, Vidyanagari, Santacruz (E), Mumbai, India

• **Extension work/Community Service:**

1. Assistant Dean Students Welfare, Univ. College of Science, MLSU, Udaipur from July 2005 – Nov. 2007.
2. Proctor, Univ. College of Science, MLSU, Udaipur (2003-04 and 2004-05).
3. Programme Officer, NSS, Univ. College of Science, MLSU, Udaipur (2000-01 and 2001-02)

• **Major research projects sanctioned/completed:**

Sr. No.	Title of the project	Name of the funding agency	Duration
1	Compton spectroscopy and electronic properties of some technologically important materials	SERB, New Delhi [21.22 Lac] (PI)	Started in April, 2017
2	Support under UGC-SAP (DSA-II phase)	University Grant Commission, New Delhi [Rs. 2 Crore] (Coordinator)	April 2015 to March 2020)
3	Electrical and magnetic properties of spinel oxides: Utilization of Indus synchrotron beamlines	UGC-DAE Consortium for Scientific Research, Indore [Rs. 7.5 lac ] (PI)	Started in April, 2015
4	Compton profile study of some technologically important materials (Phase II)	Science and Engineering Research Board (SERB), New Delhi [Rs. 33.44 lac] (PI)	May, 2013- December, 2016 <b>(Completed)</b>
5	Electronic and magnetic properties of functional materials using Compton scattering	Department of Atomic Energy-Board of Research on Nuclear Sciences (DAE-	April 2013- March 2016 <b>(Completed)</b>

		BRNS), Mumbai [Rs. 24.73 lac] (PI)	
6	Study of electronic structure of spinel ferrites by resonant photoemission and Compton spectroscopies	UGC-DAE Consortium for Scientific Research, Indore [Rs. 1.4 lac ] (PI)	January, 2012 to March, 2014 <b>(Completed)</b>
7	Electronic structure of some technologically important materials	Council of Scientific and Industrial Research (CSIR), Extramural Research Project, New Delhi. [Rs. 14 lac] (PI)	June 2010 to June 2013 <b>(Completed)</b>
8	Compton spectroscopy and electronic structure of ceramics	University Grants Commission (UGC), New Delhi [Rs. 6 lac] (PI)	May 2009 to Oct. 2012 <b>(Completed)</b>
9	Charge and magnetic Compton profiles of some alloys and compounds	Defense Research & Dev. Organization (DRDO), New Delhi [Rs. 29.24 lac] (PI)	May 2009 to May 2012 <b>(Completed)</b>
10	Support under UGC-SAP (DSA-I phase)	University Grant Commission, New Delhi [Rs. 1 Crore] (Dy. Coordinator)	April 2008 to March 2013) <b>(Completed)</b>
11	Compton profile study of some technologically important materials (Phase-I)	Department of Science & Technology (DST), New Delhi [Rs. 35 lac] (PI)	October 2008 to October 2012 <b>(Completed)</b>
12	Energy dispersive experiments using gamma-rays: Phase II	Department of Science & Technology (DST), New Delhi [Rs. 21.44 lac] (PI)	September 2005 to August 2008 <b>(Completed)</b>
13	Band structure calculations for some technologically important metals and semiconductors	Defense Research & Development Organisation (DRDO), New Delhi [Rs. 10.20 lac] (PI)	October 2004 to October 2007 <b>(Completed)</b>
14	Characterisation of some technological important semiconductors using Compton scattering technique	Defense Research & Development Organisation (DRDO), New Delhi [Rs. 27.44 lac] (PI)	Aug. 2003 to Feb. 2007 <b>(Completed)</b>



15	Energy dispersive experiments using gamma-rays: Phase I	Department of Science & Technology (DST), New Delhi [Rs. 17.90 lac] (PI)	Sep. 2001 to Aug. 2005 <b>(Completed)</b>
16	Multiple scattering in the treatment of cancer using gamma-rays: A Monte Carlo simulation	Mohanlal Sukhadia University, Udaipur (Minor project) (PI)	1998 to 2000 <b>(Completed)</b>
17	Measurement of high resolution and magnetic Compton profiles and fabrication of a high resolution Compton spectrometer for INDUS-2 (phase-I)	Department of Science & Technology (DST), New Delhi (Co-PI)	Jan. 96 to July 99 <b>(Completed)</b>
18	Quantitative determination of radionuclides in food and environment in different parts of India	AICTE (MHRD), New Delhi (PI)	April 94 to March 1997 <b>(Completed)</b>
19	Investigation of electronic structure of some transition metals and alloys by Compton scattering technique	BRNS (DAE), Mumbai (Co-PI)	May 1994 to May 1997 <b>(Completed)</b>
20	Compton profiles of some polycrystalline transition metals, alloys, compounds and metallic single crystals	Department of Science & Technology (DST), New Delhi (Young Scientists Scheme) (PI)	July 1990 to Oct. 1994 <b>(Completed)</b>

• **Seminars, Conferences, Workshops attended/organized: 68**

S. No.	Name of the Seminar/Conference/Symposium/Workshop, etc.	Name of the Sponsoring Agency	Place and Date
1	International Conference on Functional Oxides and Nanomaterials (ICFONM-2016)	Saurashtra University, Rajkot	<b>Invited Talk</b> on “Magnetic Compton scattering: A unique tool to probe spin moments in functional oxides” November 12, 2016
2	12 <sup>th</sup> National Symposium on Nuclear and Radiochemistry (NUCAR-2015)	Bhabha Atomic Research Centre (BARC), Mumbai	<b>Invited Talk</b> on “Sensitivity of Compton scattering to electronic and magnetic properties of materials” February 9-13, 2015

3	National Conference on Materials Science (NCMS-2014)	Mewar University, Chittorgarh	<b>Invited Talk</b> on “On the development and applicability of Compton spectrometers” October 17-18, 2014
4	V <sup>th</sup> Symposium on Nuclear Analytic Chemistry	Bhabha Atomic Research Center, Mumbai	<b>Invited Talk</b> on “Compton scattering and its applications: Current status and future prospects” Jan. 20-24, 2014
5	3 <sup>rd</sup> National Conference on Advanced Materials and Radiation Physics (AMRP-2013)	Organized by Department of Physics, Sant Longowal Institute of Engineering and Technology, Longowal (Punjab)	<b>Invited Talk</b> on “Electronic properties of functional materials using Compton scattering” November 22-25, 2013
6	University Lecture Series	Shri Mata Vaishno Devi University, Katra (J & K)	<b>Invited Talk on</b> “Inelastic gamma-ray scattering with new promises” September 3-7, 2013
7	19 <sup>th</sup> ISCB International Conference	Organized by Indian Society of Chemists and Biologists and ML Sukhadia University, Udaipur	<b>Invited Talk</b> on “Use of Compton scattering in characterization of technologically important compounds” March 2-5, 2013
8	National Conference on Recent Advances in Materials and Devices	Hindu College, Sonapat, Haryana	<b>Invited Talk</b> on “Spin dependent inelastic scattering to investigate magnetic properties” Feb. 27-28, 2013
19	57 <sup>th</sup> DAE Solid State Physics Symposium	IIT Bombay, Mumbai	<b>Invited Talk</b> on “Magnetic Compton scattering: A reliable probe to investigate magnetic properties” Dec. 3-7, 2012
10	Scientific Applications of the IUAC HPC facility	Inter University Accelerator Centre, New Delhi	<b>Invited Talk</b> on “Validation of electronic structure

			calculations using Compton scattering technique” Nov. 22-23, 2012
11	39 <sup>th</sup> BSC-BRNS Meeting	Board of Research in Nuclear Sciences, Mumbai	M.L. Sukhadia University, Udaipur (Raj.) Sept. 6-8, 2012
12	DST-PAC Meeting on Condensed Matter Physics and Material Sciences	Department of Science and Technology, New Delhi	Inter University Accelerator Centre, New Delhi, July 30, 2012
13	Training Programme on Research Methodologies-2012	ML Sukhadia University, Udaipur	<b>Invited Talk</b> on “How to prepare research projects” April 21-27, 2012
14	National Symposium on Advances in Materials Science and Technology	Deptt. of Physics University School of Sciences, Gujarat University Ahmedabad	<b>Invited Talk</b> on “Magnetic Compton spectroscopy: A reliable probe to study the magnetic properties of ferromagnetic materials”
15	2 <sup>nd</sup> National Conference on Advanced Materials and Radiation Physics	Sant Longowal Institute of Engineering and Technology, Longowal, Sangrur, Punjab	<b>Invited Talk</b> on “Magnetic Compton Scattering: A Unique Probe To Measure Spin Moments”
16	First International Conference on Road Safety Vision-2020 (ICRSV-2020)	M.L. Sukhadia University, Udaipur (Raj.); All India Federation of Motor Vehicles Department Technical Officer’s Association & Transport Department, Govt. of Rajasthan	M.L. Sukhadia University, Udaipur (Raj.) May 21-22, 2011 <b>(Convener of the Conference)</b>
17	Workshop on Public Awareness on Radiation	Department of Physics, M.L. Sukhadia University, Udaipur (Raj.)	Department of Physics, M.L. Sukhadia University, Udaipur (Raj.) March 22, 2011 <b>(Convener of the Workshop)</b>
18	International Conference of Magnetic	Saha Institute of	Saha Institute of

	Materials (ICMM-2010)	Nuclear Physics, Kolkata	Nuclear Physics, Kolkata Oct. 25-29, 2010
19	18 <sup>th</sup> National Symposium on Radiation Physics	Indian Society for Radiation Physics, Mumbai	M.L. Sukhadia University, Udaipur( <b>Convener of the Symposium</b> ) Nov. 19-21, 2009, Also Invited Talk
20	Workshop of Nanostructured materials	Deptt. of Physics, M.L. Sukhadia University, Udaipur	<b>Invited talk</b> on “Band structure calculations and Compton profile studies” at M.L. Sukhadia University, Udaipur, Oct, 2009
21	Meeting on Nanoscience with nano-sized high energy photon beam	JNCASR, Bangalore	JNCASR, Bangalore September 2008
22	Workshop on MNIT Syllabi and Course Structure	Deptt. of Physics, MNIT Jaipur	MNIT Jaipur 24.6.08
23	I. A. Patel (Shertha) Memorial Lecture series	Deptt. of Physics, Sardar Patel Univ., Vallabh Vidhya Nagar, Gujarat	<b>Invited talk</b> on “Compton scattering: A probe for verification of band structure calculations”, at S. Patel Univ., Vallabh Vidhya Nagar, December, 2007
24	Awareness Workshop on Low Temperature and High Magnetic Field Facilities at CSR, Indore	IUC, Indore	IUC, Indore December, 2007
25	International Conference on Ferromagnetic Shape Memory Alloys 2007	S N Bose National Centre for Basic Sciences, Kolkata	<b>Invited talk</b> on “Compton scattering study of shape memory alloys” at S N Bose National Centre for Basic Sciences, Kolkata, India in November 2007
26	17 <sup>th</sup> National Symposium on Radiation Physics (NSRP-17)	Indian Society for Radiation Physics, Mumbai	<b>Invited talk</b> on “Electronic structure of metals and alloys using Compton profiles” at Saha Institute of Nuclear Physics, Kolkata in November

			2007.
27	14 <sup>th</sup> WIEN2K – Workshop	Institute of High Performance Computing, Singapore	<b>Talk</b> at Institute of High Performance Computing, Singapore (2007) on “Compton scattering: A reliable probe for verification of band structure calculations”.
28	Symposium on Radiation Sources, Detection and Applications (SRSDA07)	Indian Society for Radiation Physics, Mumbai	<b>Invited Talk</b> at Department of Physics, Punjabi University, Patiala on “Role of Compton profiles in the verification of band structure calculations” on 5.2.07
29	SAGAMORE XV International Conference on Electron Charge, Spin and Momentum Densities	University of Warwick, U.K.	<b>Talk</b> at University of Warwick, Coventry, UK on “Magnetic Compton scattering study of first order magnetic transition in Ir doped CeFe <sub>2</sub> ”, August 13-18, 2006
30	Conference on Akhil Bhartiya Rajbhasha Takniki Sangoshthi	Defense Research & Development Organisation (DRDO)	Solid State Physics Lab., New Delhi on 29.03.2005 <b>(Invited talk)</b>
31	DST-PAC Meeting on Condensed Matter Physics and Material Sciences	Department of Science and Technology, New Delhi	University of Mysore, Mysore, Jan. 27-29, 2005
32	DST-PAC Meeting on Condensed Matter Physics and Material Science	Department of Science and Technology, New Delhi	M. L. Sukhadia Univ. Udaipur <b>(Local Convener of the PAC Meeting)</b> September 30 – October 1, 2004
33	DST-PAC Meeting on Condensed Matter Physics and Material Sciences	Department of Science and Technology, New Delhi	Indian Institute of Technology, Bombay, May 2004

34	Refresher Course in Chemistry	University Grants Commission, New Delhi	Mohan Lal Sukhadia University, Udaipur, Jan. 2004 <b>(Resource Person – one talk)</b>
35	Round Table Conference on Globalisation-Challenges for Canada and India with Special Reference to WTO	Govt. of Rajasthan	HCM, RIPA, Udaipur, July 20, 2004
36	Refresher Course in Environmental Sciences	University Grants Commission, New Delhi	Mohan Lal Sukhadia University, Udaipur, Dec. 2003 <b>(Resource person – one talk)</b>
37	XIX National Convention of Environmental Engineering	Hindusthan Zinc Limited, Udaipur	The Institute of Engineering, Udaipur, Oct. 16-18, 2003
38	Refresher Course in Physics	University Grants Commission, New Delhi	Mohan Lal Sukhadia University, Udaipur, July 15 to Aug. 03, 2002 (Resource person and responsible for one week activities)
39	Seminar on Application of Nuclear Techniques in Science Teaching	University Grants Commission, Bhopal	University Maharaja's College, Jaipur, Sept. 28-29, 2002 <b>(Invited talk)</b>
40	11 <sup>th</sup> National Symposium on Environment (NSE-11)	Board of Research in Nuclear Sciences, Department of Atomic Energy, Mumbai	Rajasthan College of Agriculture, MP Univ., Udaipur; Rajasthan Atomic Power Station, Kota; Health, Safety & Environment Group, BARC, Mumbai, June 5-7, 2002
41	DAE Solid State Physics Symposium	Department of Atomic Energy (DAE), Government of India, Mumbai	BARC, Mumbai, Dec. 26-30, 2001
42	Refresher Course in Physics	University Grants Commission, New	Mohan Lal Sukhadia University, Udaipur,

		Delhi	Oct. 20 to Nov. 10, 2001 <b>(Resource person and responsible for one week activities)</b>
43	DAE Solid State Physics Symposium	Department of Atomic Energy (DAE), Government of India, Mumbai	Guru Ghasi Das University, Bilaspur, C.G., Dec. 27-31, 2000
44	XII National Conference on Atomic and Molecular Physics	Govt. of India and MLSU	M. L. Sukhadia Univ., Udaipur, Dec. 29, 1998 to Jan. 2, 1999 <b>(ORGANISING SECRETARY)</b>
45	7 <sup>th</sup> International Symposium on Radiation Physics (ISRP-7)	Various funding agencies, Govt. of India	University of Rajasthan, Jaipur, Feb. 24-28, 1997 <b>(Member, Organising Committee)</b>
46	26 <sup>th</sup> Annual Convention on Technical Education: Prescription, Assessment and Control of Quality and Development Policy	Indian Society for Technical Education, Malaviya Regional Engineering College, Jaipur	Malaviya Regional Engineering College, Jaipur, Jan. 4-6, 1997 <b>(RAPPORTEUR)</b>
47	School on Science with Synchrotron Radiation & Indo-Japanese Meeting on SPring-8 Utilisation	DAE, Mumbai; CAT, Indore; BARC, Mumbai; DST, New Delhi	IUC-DAEF, Indore, Nov. 25-27, 1996
48	UNU-KEK PG Course on Synchrotron Radiations	The United Nations University, Tokyo and National Laboratory for High Energy Physics (KEK) Tsukuba, Japan	The United Nations University, Tokyo and National Laboratory for High Energy Physics (KEK) Tsukuba, Japan, March 25 to April 10, 1996
49	Meeting of AICTE Review of MHRD Funded Projects	Govt. of India	Indian Institute of Technology, New Delhi, Dec. 15, 1996
50	Seminar and Discussion Meeting on Laser Spectroscopy Applications	Govt. of India	Indian Institute of Technology, New Delhi, Jan. 20-21, 1995

51	DAE Solid State Physics Symposium	Department of Atomic Energy (DAE), Government of India, Mumbai	University of Rajasthan, Jaipur, Dec. 27-31, 1994
52	National Seminar on Disordered Materials	Govt. of India	University of Rajasthan, Jaipur, Oct. 24-26, 1994 ( <b>Member of Organising Committee</b> )
53	81 <sup>st</sup> Session of Indian Science Congress	Govt. of India	University of Rajasthan, Jaipur, Jan. 3-8, 1994 ( <b>Member of Science Exhibition Committee</b> ) Specially invited by DST to speak on "Science in India and International Co-operation" during Young Scientist Session
54	Euro conference on Dynamic Properties of Condensed Matter	European Community; University of Patras; General Secretariat for Research and Technology, Greece	University of Patras, Greece, Sept. 21-26, 1993
55	Storage Ring Source Users Meeting	University of Warwick, U.K.	Daresbury, U. K., 1993
56	Conference on Condensed Matter and Material Physics	University of Warwick, U.K.	University of Sheffield, U.K., Dec. 15-17, 1992
57	23 <sup>rd</sup> National Seminar on Crystallography	Govt. of India	M. Regional Engg. College, Jaipur, Feb. 20-22, 1992 ( <b>Organising Secretary</b> )
58	DAE Solid State Physics Symposium	Department of Atomic Energy, Government of India, Mumbai	Deptt. of Physics, BHU, U.P., Dec. 21-24, 1991
59	International Workshop on Crystal Growth of Technologically Important Materials for Device Applications	Govt. of India	Anna University, Madras, Nov. 8-15, 1991



60	Workshop on DST funded Young Scientist Projects	Department of Science & Technology (DST), New Delhi	Indian Institute of Technology, Kanpur, Sept. 1991
61	ISTE Summer School on Crystal Growth and Characterisation of Technologically Important Crystals for Device Applications	Govt. of India	Anna University, Madras, June 5-18, 1991
62	DAE Solid State Physics Symposium	Department of Atomic Energy, Government of India, Mumbai	BARC, Mumbai, Jan. 1-4, 1991
63	Third National Conference on Positron Annihilation and Compton Scattering	Various funding agencies, Govt. of India	University of Rajasthan, Jaipur, Jan. 17-20, 1990 ( <b>Member of National and Local Organizing Committees</b> )
64	Refresher Course on Solid State Physics	University Grants Commission, New Delhi	Deptt. of Physics, University of Rajasthan, Jaipur, 1989 ( <b>Resource Person</b> )
65	National Conference on Disordered Material	Various funding agencies, Govt. of India	University of Rajasthan, Jaipur, Oct. 18-21, 1989 ( <b>Member of Organizing Committee</b> )
66	Refresher Course on Condensed Matter Physics	University Grants Commission, New Delhi	Deptt. of Physics, University of Rajasthan, Jaipur, March 27 to April 15, 1989 ( <b>Resource Person</b> )
67	DAE Solid State Physics Symposium	Department of Atomic Energy, Government of India, Mumbai	Deptt. of Physics, Agri. Univ., Pantnagar, U.P., Dec. 20-23, 1986
68	Symposium on Current Trends in the Physics of Materials	Indian Institute of Technology, Kanpur	Indian Institute of Technology, Kanpur, Nov. 5-8, 1986
69	Meeting of National Academy of Sciences	National Academy of Sciences, India	University of Rajasthan, Jaipur, Oct. 25-27, 1986

## Research guidance as supervisor:

(1) Ph.D. students supervised: (26 awarded degree of Ph.D.+ 2 submitted thesis)

Sr. No.	Name of scholar	Title of thesis	Place of work	Year
1	Dr. Bhoor Singh Meena	Study of electronic properties and momentum densities of some compounds	Mohan Lal Sukhadia University, Udaipur	2017 (Awarded)
2	Dr. Sonal Talreja	Electronic properties of some materials for non-volatile memory and optoelectronic devices	Mohan Lal Sukhadia University, Udaipur	2017 (Awarded)
3	Dr. Sonu Sharma	Compton spectroscopy and electronic properties of some rare earth compounds	Mohan Lal Sukhadia University, Udaipur	2016 (Awarded)
4	Dr. Pradeep Jain	Electronic properties of some energetic material	Mohan Lal Sukhadia University, Udaipur	2014 (Awarded)
5	Dr. V. Raykar	Compton profile study and band structure calculations of some compounds	Mohan Lal Sukhadia University, Udaipur	2013 (Awarded)
6	Dr. K. C. Bhamu	Study of electronic properties and Compton profiles of some ceramic materials	Mohan Lal Sukhadia University, Udaipur	2012 (Awarded)
7	Dr Ritu Joshi	Compton spectroscopy and electronic properties of some refractory materials	Mohan Lal Sukhadia University, Udaipur	2012 (Awarded)
8	Dr. Hosiyar Singh Mund	Compton	Mohan Lal Sukhadia	2012

		scattering and electronic structure study of some magnetic materials	University, Udaipur	(Awarded)
9	Dr. Jagrati Sahariya	Compton spectroscopy and band structure of some functional materials	Mohan Lal Sukhadia University, Udaipur	2012 (Awarded)
10	Dr. Amit Soni	Investigation of Properties of Materials Used for Solar Photovoltaic Cells and Applications of the Solar Cells	Malaviya National Institute of Technology, Jaipur (joint supervision with Prof. C. M. Arora and Dr. V. Gupta of Elec. Engg.))	2012 (Awarded)
11	Dr. Gopal Choudhary	A Compton profile study of electronic structure of some materials	Mohan Lal Sukhadia University, Udaipur	2011 (Awarded)
12	Dr. Laxman Vadkhiya	Electronic structure of some thermoelectric materials and semiconductors using Compton spectroscopy	Mohan Lal Sukhadia University, Udaipur	2011 (Awarded)
13	Dr. Alpa Dashora	Electronic structure and Compton profiles of some compounds.	Mohan Lal Sukhadia University, Udaipur	2011 (Awarded)
14	Dr. Vinit Sharma	Measurements of Compton profiles and band structure calculations of some compounds and transition metals	Mohan Lal Sukhadia University, Udaipur	2010 (Awarded)
15	Dr. A. Rathor	Compton profile study of some heavy metals and compounds	Mohan Lal Sukhadia University, Udaipur	2010 (Awarded)

16	Dr. G. Ahmed	Electronic structure of some transition metal halides and alloys using Compton scattering technique	Mohan Lal Sukhadia University, Udaipur	2009 (Awarded)
17	Dr. G. Arora	Compton spectroscopy of some binary alloys and compounds	Mohan Lal Sukhadia University, Udaipur	2008 (Awarded)
18	Dr. H. Malhotra	Compton scattering study of some rare earth elements	Mohan Lal Sukhadia University, Udaipur	2007 (Awarded)
19	Dr. N. L. Heda	Electronic structure of some semi-conductors using Compton scattering technique	Mohan Lal Sukhadia University, Udaipur	2007 (Awarded)
20	Dr. S. Khera	Electronic structure of some heavy metals using Compton scattering technique	Mohan Lal Sukhadia University, Udaipur	2007 (Awarded)
21	Dr. V. Vyas	Compton profile study of some technological important materials	University of Rajasthan, Jaipur (joint supervision)	2007 (Awarded)
22	Dr. V. Purvia	Compton scattering study of technological important compounds	University of Rajasthan, Jaipur (joint supervision)	2007 (Awarded)
23	Dr. M. Sharma	Compton profile study of some heavy materials	Mohan Lal Sukhadia University, Udaipur	2005 (Awarded)
24	Dr. S. S. Asawat	Study of some technologically important materials by Compton scattering technique	University of Rajasthan, Jaipur (joint supervision)	2005 (Awarded)

25	Dr. T. Ramesh	Electronic structure studies of some materials by magnetic Compton scattering	University of Rajasthan, Jaipur (joint supervision)	2002 (Awarded)
26	Dr. R. Jain	Compton profile studies of some metals and binary alloys	University of Rajasthan, Jaipur (joint supervision)	2000 (Awarded)

(2) Working for Ph.D.: **8 (Physics) + 1 (Computer Science)**

Sr. No.	Name of scholar	Title of thesis	Place of work	Year
1	Mr. Samir Bhatt	Electron momentum density and band structure calculation of functional materials	Mohan Lal Sukhadia University, Udaipur	Being supervised (w.e.f. Dec. 2012)
2	Mr. Kishor Kumar	Electronic structure and Compton spectroscopy of some magnetic and solar cell compounds	Mohan Lal Sukhadia University, Udaipur	Thesis submitted (2017)
3	Ms. Khushboo Sharma	Compton spectroscopy and ab-initio electronic structure of some compounds and alloys	Mohan Lal Sukhadia University, Udaipur	Being supervised (w.e.f. Dec. 2012)
4	Mr. Arvind Sharma	Electronic structure of spinel ferrites using Compton scattering	Mohan Lal Sukhadia University, Udaipur	Being supervised (w.e.f. Dec. 2011)
5	Ms. Manisha Purohit	First-principles computation of electronic structure of some materials employed in computer hardware	Mohan Lal Sukhadia University, Udaipur	Being supervised (w.e.f. Dec. 2014)
6	Mr. Mahesh Suthar	Electronic and magnetic properties of spinel oxides using photoemission and Compton	Mohan Lal Sukhadia University, Udaipur	Being supervised (w.e.f. March. 2015)

		spectroscopies		
7	Ms. Seema Kumari Meena	Compton spectroscopy and ab-initio calculations of some functional compounds	Mohan Lal Sukhadia University, Udaipur	Being supervised (w.e.f. March. 2015)
8	Mr. Pawan Kumar Jangid		Mohan Lal Sukhadia University, Udaipur	Being supervised (w.e.f. May 2017)
9	Ms. Deepika Mali		Mohan Lal Sukhadia University, Udaipur	Being supervised (w.e.f. May 2017)

### Other academic and support activities

I have been involved in many academic and support activities. A few of these during the last 14 years are listed here:

1. Dean, University College of Science, MLSU, Udaipur w.e.f. 1-1-2017.
2. Chairman, Faculty of Science, M.L. Sukhadia University, Udaipur
3. Director Computer Centre, M.L. Sukhadia University, Udaipur w.e.f. Oct. 2014-2016
4. Associate Dean, University College of Science, M.L. Sukhadia University. w.e.f. June 2014 to Dec. 31, 2016 and Dean, University College of Science, ML Sukhadia University, Udaipur w.e.f. Jan.1, 2017.
5. Coordinator of UGC DSA-II Program, April 2015 to March 2020 (Grant: Rs. 2 Crore)
6. Advisor, International Students, MLSU, July 2013-2016.
7. Radiological Safety Officer, ML Sukhadia University, Udaipur
8. Completed three years of full tenure of Head (Chairman), Department of Physics, ML Sukhadia University, Udaipur (Sept. 01, 2010 to Sept. 01, 2013).
9. Coordinator (till Sept. 01, 2013) of DST-FIST (level-2), Grant: Rs. 3 Crore
10. Member of Women Scientist (WOS-A) Evaluation Committee of DST, New Delhi (for three years 2013-15).
11. Member of Expert Committee of DST, New Delhi for Evaluation of YSS schemes (2015-18).
12. Dy. Coordinator of UGC DSA-SAP Program, Grant: Rs. 1 Crore
13. Vice-President of Indian Society for Radiation Physics (since 2009 to 2016).
14. Member of National Advisory Committee of International Conference on "Recent Advances and Current Trends in Chemical and Biological Sciences", 2013.
15. Member, Research Committee, Faculty of Science, ML Sukhadia University since 2013.
16. Member of Academic Council of ML Sukhadia University, Udaipur, 2010-2013.
17. Member of Academic Council of Baroda University, Vadodara 2014-2017
18. Member of Staff Council of ML Sukhadia University, Udaipur, 2010-2013.

19. Member of National Advisory Committee of 19<sup>th</sup> National Symposium on Radiation Physics, 2012.
20. Member of National Advisory Committee of “Orientation Workshop on Transit of Venus”, 2012
21. Chairman of House Allotment Committee 2011-2012
22. Convener and Member of Different Inspection Committees for Inspection of Various Academic Colleges of ML Sukhadia University.
23. Member of Controlling Committee for Overall Control of Student Election in 2012.
24. Member, Committee to Review the Semester Scheme of University (2012).
25. Member of National Advisory Committee of National Symposium on Advances in Materials Science and Technology, 2012.
26. Member of Expert Committee for Reviewing the Performance of the Inspire Fellows under INSPIRE Program, DST, New Delhi in 2012.
27. Member of National Advisory Committee of 3<sup>rd</sup> Conference on Condensed Matter and Materials, March 3-5, 2012.
28. Member of Standing Committee for SC/ST Cell w.e.f 2012.
29. Member of Selection Committee of the Projects under DST-Young Scientist Scheme, New Delhi.
30. Member, Selection Committee of Govt. Women Engineering College, Ajmer (twice).
31. Member, Committee to Decide Modalities Regarding BCA Course.
32. Convener, Committee to Decide Modalities of Detention of Teachers.
33. Member, Committee of Courses, CTAE, MP University of Agriculture and Technology, Udaipur (2010-13).
34. Member of Statutory Selection Committee of Professors/Associate Professors/Assistant Professors in ML Sukhadia University in 2011.
35. Member of Board of Studies in Physics of The IIS University, Jaipur since July 2011.
36. Convener of the workshop on Public Awareness on Radiation, 2011.
37. Member, Committee to Finalize the Open Tenders of the University.
38. Member of the Screening Committee of the Application Forms for the Post of Professors/Associate Professors/Assistant Professors in Physics, Sanskrit, English, Philosophy, History, Rajasthani, Urdu, Hindi, Jainology and Prakrit, Visual arts in 2011.
39. Member of Statutory Selection Committee of Professors in Physics under Career Advancement Scheme in 2011, M.L. Sukhadia Univ.
40. Member of the Selection Committee of Principal and Teachers in AKC College, Chittorgarh, St. Paul’s College of Science & Management, Abu Road in 2011.
41. Convener of FIST International Conference on Road Safety Vision-2020 in May 2011.
42. Member of Selection Committee of Principal of AC College, Pratapgarh.
43. Convener of 18<sup>th</sup> National Symposium on Radiation Physics, 2009.
44. Expert of the Committee for the Discussion of Syllabus and Course Structure of UG and PG Courses in MNIT, Jaipur in 2008.
45. Nominee of Vice-chancellor to Select Principal in Rana Pratap Women B.Ed. College, Bhinder, 2008.
46. Convener of the Physical Verification Committee for University College of Science, MLSU, Udaipur.
47. Member, Committee to Conduct RMAT 2006-07 Examination of Rajasthan State.
48. DST Nominee for the Selection of JRF in Jai Narain Vyas University, Jodhpur, 2005 and 2011.

- 49. Member of Canteen Committee, 2004-05
- 50. Proctor of College of Science, 2004-05
- 51. Program Officer, NSS, 2001-02
- + Many more.....



(Prof. B. L. Ahuja)



## Research publications of Prof. Ahuja

Total No. of research papers published: About 318

### (a) In peer-reviewed international journals (161):

1. Electronic and Magnetic Properties of Highly Correlated Half Metallic Layered Sr<sub>2</sub>CoO<sub>4</sub> Cobaltate Using mBJ Exchange Potential  
Komal Bapna and B. L. Ahuja  
J Supercond Nov Magn (2017, *In press*) DOI: 10.1007/s10948-017-4120-7
2. Tungsten-doped TiO<sub>2</sub>/reduced Graphene Oxide nano-composite photocatalyst for degradation of phenol: A system to reduce surface and bulk electron-hole recombination  
Manisha Yadav, Asha Yadav, Rohan Fernandes, Yaksh Popat, Michele Orlandi, Alpa Dashora, D.C. Kothari, Antonio Miotello, B.L. Ahuja, Nainesh Patel,  
J. Environ. Management (2017, *In press*)  
DOI: doi.org/10.1016/j.jenvman.2017.08.010
3. Study of electronic structure and Compton profiles of transition metal diborides  
S. Bhatt, N.L. Heda, K. Kumar and B.L. Ahuja  
Physica B **518**, 13-19 (2017)
4. Electronic and optical response of Cr-doped MoSe<sub>2</sub> and WSe<sub>2</sub>: Compton measurements and first-principles strategies.  
Kishor Kumar, N.L. Heda, A. R. Jani and B. L. Ahuja  
Journal of Physics and Chemistry of Solids **107**, 23–31 (2017)
5. Investigation of spin moment in Ga-substituted cobalt ferrite: magnetic Compton scattering and photoemission studies.  
Arvind Sharma, H. S. Mund, Komal Bapna, Shailja Tiwari, M. Itou, Y. Sakurai, and B. L. Ahuja  
J Mater Sci **52**, 4568–4574 (2017)
6. Electron momentum distribution and electronic response of ceramic borides  
N.L. Heda, B.S. Meena, H.S. Mund, Jagrati Sahariya, Kishor Kumar, B.L. Ahuja  
Physica B: Physics of Condensed Matter **509**, 16-23 (2017)
7. Structural and magnetic properties of Mg doped cobalt ferrite nano particles prepared by sol-gel method  
H.S. Mund and B.L. Ahuja  
Materials Research Bulletin **85**, 288-233 (2017)
8. Modified Becke-Johnson potential inspired electronic and optical properties of memory storage materials PbSb<sub>2</sub>Te<sub>4</sub> and SnSb<sub>2</sub>Te<sub>4</sub>.  
S. Talreja and B.L. Ahuja  
J. Mater Sci. **52**, 346-352 (2017)

9. The effect of Cr substitution on the structural, electronic and magnetic properties of pulsed laser deposited NiFe<sub>2</sub>O<sub>4</sub> thin films.  
K. Panwar, S. Tiwari, K. Bapna, N.L. Heda, R.J. Choudhary, D.M. Phase and B.L. Ahuja  
J. Mag. Mag. Mater. 421, 25-30 (2017)
10. Study on electron momentum density of zinc and cadmium molybdates: First principles calculations and Compton spectroscopy  
K. Sharma, H.S. Mund, K. Kumar, S. Talreja and B.L. Ahuja  
Physica Status Solidi B **253**, 1743-1753 (2016)
11. Feasibility of crystalline isostructural X<sub>2</sub>Sb<sub>2</sub>Te<sub>5</sub> (X=Ge, Si) phase change materials in memory storage devices: First principles calculations  
S. Talreja, K. Sharma and B.L. Ahuja  
Computational Materials Science **121**, 113-1108 (2016).
12. High energy Compton spectroscopy and electronic structure of Laves phase ZrFe<sub>2</sub>  
S. Bhatt, K. Kumar, G. Arora, K. Bapna and B.L. Ahuja  
Radiation Physics and Chemistry **125**, 109-114 (2016).
13. Electronic and optical properties of ceramic Sc<sub>2</sub>O<sub>3</sub> and Y<sub>2</sub>O<sub>3</sub>: Compton spectroscopy and first principles calculations  
B.L. Ahuja, S. Sharma, N.L. Heda, S. Tiwari, K. Kumar, B.S. Meena and S. Bhatt  
Journal of Physics and Chemistry of Solids **92**, 53-63 (2016).
14. Compton profiles and Mulliken's populations of cobalt, nickel and copper tungstates: Experiment and theory.  
B.S. Meena, N.L. Heda, K. Kumar, S. Bhatt, H.S. Mund and B.L. Ahuja  
Physica B **484**, 1 (2016).
15. Efficient Co-B-codoped TiO<sub>2</sub> photocatalyst for degradation of organic water pollutant under visible light  
R. Jaiswal, N. Patel, A. Dashora, R. Fernandes, M. Yadav, R. Edla, R. S. Varma, D. C. Kothari, B. L. Ahuja and A. Miotello  
Applied Catalysis B: Environmental **183**, 242 (2016).
16. Electronic and optical response of zirconium sulphoselenides: Compton spectroscopy and first-principles calculations  
K. Kumar, S. Bhatt, A. R. Jani and B. L. Ahuja  
Physica B **478**, 138 (2015).
17. Compton profiles and electronic structure of monoclinic zinc and cadmium tungstates  
B. S, Meena, N. L. Heda, H. S. Mund and B. L. Ahuja  
Radiation Physics and Chemistry **117**, 93 (2015).
18. Experimental and theoretical investigations on the activity and stability of substitutional and interstitial boron in TiO<sub>2</sub> photocatalyst

- N. Patel, A. Dashora, R. Jaiswal, R. Fernandes, M. Yadav, D.C. Kothari, B.L. Ahuja, and A. Miotello  
J. of Phys. Chem. C **119**, 18581 (2015).
19. Electronic structure, optical properties and Compton profiles of RuO<sub>2</sub>: Performance of PBEsol exchange-correlation approximation  
K. Sharma, J. Sahariya and B. L. Ahuja  
J. Alloys Comp. **645**, 414 (2015).
20. Ab-initio calculations for electronic structure and momentum densities of samarium sesquioxide  
S. Sharma, N. L. Heda, K.K. Suthar, S. Bhatt, K. Sharma and B. L. Ahuja  
Comp. Mater. Sci. **104**, 205 (2015).
21. Role of modified Becke-Johnson potential in computation of electronic and optical properties of mixed crystals CdxZn1-xSe  
S. Talreja and B. L. Ahuja  
Opt. Mater. **46**, 70 (2015).
22. Electronic properties and momentum densities of tin chalcogenides: Validation of PBEsol exchange-correlation potential  
B. L. Ahuja, V. Raykar, R. Joshi, S. Tiwari, S. Talreja and G. Choudhary  
Physica B **465**, 21 (2015).
23. Electronic structure and cohesive properties of GaN  
G. Arora, H. S. Mund, V. Sharma, N. L. Heda and B. L. Ahuja  
Indian J. Pure Appl. Phys. **53**, 328 (2015).
24. Temperature dependent spin and orbital magnetization in TbCo<sub>2</sub>: Magnetic Compton scattering and first-principles investigations  
B. L. Ahuja, H. S. Mund, J. Sahariya, A. Dashora, M. Halder, S. M. Yusuf, M. Itou and Y. Sakurai  
J. Alloys Comp. **633**, 430 (2015).
25. Compton scattering and charge transfer in Er substituted DyAl<sub>2</sub>  
B. L. Ahuja, F. M. Mohammad, S. F. Mohammed, J. Sahariya, H. S. Mund and N. L. Heda  
J. Phys. Chem. Solids **77** 50 (2015).
26. Temperature-dependent spin magnetization density in Mn-rich Ni-Mn-Sn shape memory alloy by magnetic Compton scattering  
B. L. Ahuja, Alpa Dashora, H. S. Mund, K. R. Priolkar, S. M. Yusuf, M. Itou and Y. Sakurai  
EPL **107** 27005 (2014).
27. Electronic structure of lanthanum sesquioxide: A Compton scattering study  
Sonu Sharma, Jagrati Sahariya, Gunjan Arora and B. L. Ahuja  
Physica B **450** 25 (2014).

28. Magnetic properties of  $\text{NiFe}_{2-x}\text{RE}_x\text{O}_4$  (RE-Dy, Gd) using magnetic Compton scattering  
Jagrati Sahariya, H. S. Mund, Arvind Sharma, Alpa Dashora, M. Itou, Y. Sakurai and B. L. Ahuja  
*J. Magnetism and Magnetic Materials* **360** 113 (2014).
29. Formation of an intermediate band in the energy gap of  $\text{TiO}_2$  by Cu-N- doping : First principles study and experimental evidence  
Alpa Dashora, N. Patel, D. C. Kothari, B. L. Ahuja and A. Miotello  
*Solar Energy Materials and Solar Cells* **125** 120 (2014).
30. Efficient photocatalytic degradation of organic water pollutants using V-N-co doped  $\text{TiO}_2$  thin films  
N. Patel, R. Jaiswal, T. Warang, G. Scarduelli, Alpa Dashora, B.L. Ahuja, D.C. Kothari and A. Miotello  
*Applied Catalysis B: Environmental* **150-151** 74 (2014).
31. Compton scattering and electronic properties of tungsten ditelluride  
G. Arora and B. L. Ahuja  
*Solid State Phenomena* **209** 107 (2014).
32. A high energy Compton scattering study of magnetocaloric  $\text{HoAl}_2$   
H. S. Mund, J. Sahariya and B. L. Ahuja  
*Radiation Physics and Chemistry* **96** 148 (2014).
33. Compton profiles and nature of bonding in tantalum chalcogenides  
K. C. Bhamu, A. Sharma, A. R. Jani and B. L. Ahuja  
*Solid State Phenomena* **209** 143 (2014).
34. Role of oxygen atoms in bonding properties of semiconducting tungsten trioxide  
N. L. Heda, A. Dashora, J. Sahariya and B. L. Ahuja  
*Solid State Phenomena* **209** 156 (2014).
35. Electronic properties of RDX and HMX: Compton scattering experiment and first-principle calculations  
B. L. Ahuja, P. Jain, J. Sahariya, N. L. Heda and P. Soni  
*J. Phys. Chem. A* **117** 5685 (2013).
36. Study of spin and orbital magnetization in Dy- and Gd- doped Co ferrite using magnetic Compton scattering  
H. S. Mund, J. Sahariya, R. J. Choudhary, D. M. Phase, A. Dashora, M. Itou, Y. Sakurai and B. L. Ahuja  
*Appl. Phys. Letts.* **102** 232403 (2013).
37. Feasibility of magnetic Compton scattering in measurement of small spin moments: A study on  $\text{LaFe}_{1-x}\text{Ni}_x\text{O}_3$  ( $x=0.4$  and  $0.5$ )

- A. Dashora, J. Sahariya, R. J. Choudhary, D.M. Phase, M. Itou, Y. Sakurai and B. L. Ahuja  
Appl. Phys. Letts. **102** 142403 (2013).
38. Compton scattering study and electronic structure of different phases of  $\text{NH}_4\text{NO}_3$   
P. Jain, J. Sahariya and B. L. Ahuja  
Physica Scripta **87** 065102 (2013).
39. Directional Compton profiles of CdTe using a low intensity  $^{241}\text{Am}$  source  
V. Raykar, J. Sahariya and B. L. Ahuja  
Rad. Phys. Chem. **87** 35 (2013).
40. Compton profile study and electronic properties of tantalum diboride  
V. Rayakar, K. C. Bhamu and B. L. Ahuja  
Appl. Rad. Isotopes **77** 38 (2013).
41. Ab-initio calculations for electronic and optical properties of explosive silver azide  
P. Jain, J. Sahariya, H.S. Mund, M. Sharma and B. L. Ahuja  
Comp. Mater. Sciences **72** 101 (2013).
42. Electronic properties and electron momentum density of monoclinic  $\text{WO}_3$   
N. L. Heda and B. L. Ahuja  
Comp. Mater. Sciences **72** 49 (2013).
43. Electronic structure of ceramic  $\text{CrSi}_2$  and  $\text{WSi}_2$ : Compton spectroscopy and *ab-initio* calculations  
K.C. Bhamu, J. Sahariya and B. L. Ahuja  
J. Phys. Chem. Solids **76** 765 (2013).
44. Magnetic Compton scattering study of  $\text{Ni}_2\text{Mn}_{1.4}\text{Sn}_{0.6}$  shape memory alloy  
A. Dashora, H. S. Mund, J. Sahariya, K. R. Priolkar, N. Lobo, M. Itou, Y. Sakurai and B. L. Ahuja  
Advanced Material Research **665** 189 (2013).
45. Electronic structure and electron momentum densities in  $\text{TiSi}$   
A.M. Ghaleb, F.M. Mohammad, J. Sahariya, M. Sharma and B.L. Ahuja  
Physica B **412** 106 (2013).
46. Electronic structure of  $\text{CaCO}_3$ : A Compton scattering study  
S.F. Mohammed, F. M. Mohammed, J. Sahariya, H. S. Mund, K. C. Bhamu and B. L. Ahuja  
App. Rad. Isotopes. **72** 64 (2013).
47. Investigation of electronic structure of  $\text{Nd}_2\text{O}_3$ : Experiment and theory  
F. M Mohammed, A. M. Ghaleb, J. Sahariya, B. L. Ahuja and K. C. Bhamu  
Natural Science **4** 797 (2012).

48. Electronic properties of WC nano-compound: Compton spectroscopy and band structure calculations  
R. Joshi, J. Sahariya and B. L. Ahuja  
J. Experimental Nanoscience **ifirst** 1 (2012).
49. Electronic structure of Ni<sub>2</sub>TiAl: Theoretical aspects and Compton scattering measurement  
J. Sahariya and B. L. Ahuja  
Physica B **407** 4182 (2012).
50. Nature of bonding in CaTiO<sub>3</sub> and SrTiO<sub>3</sub>: A Compton scattering study  
K. C. Bhamu, A. Dashora, G. Arora and B. L. Ahuja  
Rad. Phys. Chem. **81** 728 (2012).
51. Evaluation of orbital moment in Ni-Zn ferrites: A magnetic Compton scattering study  
B. L. Ahuja, H. S. Mund, S. Tiwari, J. Sahariya, A. Dashora, M. Itou and Y. Sakurai  
Appl. Phys. Lett. **100** 132410 (2012).
52. Effect of oxygen partial pressure and Fe doping on growth and properties of metallic and insulating molybdenum oxide thin films  
S. Tiwari, R. Master, R. J. Choudhary, D. M. Phase and B. L. Ahuja  
J. Appl. Phys. **111** 083905(2012).
53. A Compton scattering study of refractory niobium diborides  
K. C. Bhamu and B. L. Ahuja  
Appl. Rad. Isotopes **70** 942(2012).
54. Enhancement of ferromagnetism in Ni excess Cu<sub>1-x</sub>Ni<sub>x</sub>MnSb half Heusler alloys  
B. L. Ahuja, A. Dashora, S. Tiwari, H. S. Mund, M. Halder, S. M. Yusuf, M. Itou and Y. Sakurai  
J. Appl. Phys. **111** 033914 (2012).
55. Electronic structure, optical properties and Compton profiles of Bi<sub>2</sub>S<sub>3</sub> and Bi<sub>2</sub>Se<sub>3</sub>  
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169. Sensitivity of Compton scattering to electronic and magnetic properties of materials  
B. L. Ahuja  
Presented in 12<sup>th</sup> National Symposium on Nuclear and Radiochemistry (NUCAR-2015), organized by Bhabha Atomic Research Centre, Mumbai (February 9-13, 2015).
170. Compton scattering study of ZrS<sub>1.5</sub>Se<sub>1.5</sub>  
K. K. Suthar, S. Bhatt, A. R. Jani and B. L. Ahuja  
Presented in 12<sup>th</sup> National Symposium on Nuclear and Radiochemistry (NUCAR-2015), organized by Bhabha Atomic Research Centre, Mumbai (February 9-13, 2015).
171. Compton profiles and electronic properties of TiB<sub>2</sub>  
S. Bhatt, K. K. Suthar, S. K. Mishra and B. L. Ahuja  
AIP Conference Proceedings **1665** 090012 (2015)  
Presented in 59<sup>th</sup> DAE Solid State Physics Symposium (December 16-20, 2014), organized by VIT University, Vellore.
172. Electronic structure of RuO<sub>2</sub> using Compton scattering technique and first principles calculations  
K. Sharma and B. L. Ahuja  
Presented in National Conference on Materials Science (NCMS-2014), Mewar University, Chittorgarh (October 17-18, 2014).
173. Electronic structure and optical properties of phase-change materials Si<sub>2</sub>Sb<sub>2</sub>Te<sub>5</sub>  
S. Talreja and B. L. Ahuja  
Presented in National Conference on Materials Science (NCMS-2014), Mewar University, Chittorgarh (October 17-18, 2014).
174. Electronic properties of zirconium boride using Compton scattering technique  
S. Bhatt, K. K. Suthar and B. L. Ahuja  
Presented in National Conference on Materials Science (NCMS-2014), Mewar University, Chittorgarh (October 17-18, 2014).
175. Compton scattering study of Gd sesquioxide  
Jagrati Sahariya, A. M. Ghaleb, F. M. Mohammed and B. L. Ahuja

Presented in DAE-BRNS 5<sup>th</sup> Symposium on Nuclear Analytic Chemistry, BARC, Mumbai, page 146, Jan, 20-24, 2014.

176. Measurement of electron momentum density in Sm<sub>2</sub>O<sub>3</sub> using Compton spectroscopy  
Sonu Sharma, Alpa Dashora, Jagrati Sahariya and B. L. Ahuja  
Presented in DAE-BRNS 5<sup>th</sup> Symposium on Nuclear Analytic Chemistry, BARC, Mumbai, page 192-193, Jan. 20-24, 2014.
177. Magnetic properties of Ga doped Cobalt Ferrite: Compton scattering study  
A. Sharma, J. Sahariya, H. S. Mund, M. Itou, Y. Sakurai and B. L. Ahuja  
Presented in 58<sup>th</sup> DAE-Solid state Physics symposium, Organized by Thapar University, Patiala, December 17-21, 2013.
178. Electronic structure of CdMoO<sub>4</sub> using Compton scattering technique  
Khushboo Sharma, J. Sahariya and B. L. Ahuja  
Presented in 58<sup>th</sup> DAE-Solid state Physics symposium, Organized by Thapar University, Patiala, December 17-21, 2013.
179. Compton profiles and First Principle Calculation of Ceramic Borides  
B. L. Ahuja, H. S. Mund, R. Joshi and Jagrati Sahariya  
Presented in International E-Workshop on Computational Condensed Matter Physics and Materials Science (IWCCMP-2013), Organized by ABV-Indian Institute of Information Technology and Management, Gwalior, November 27-29, 2013.
180. Electronic structure and momentum densities of ZnWO<sub>4</sub>  
B. S. Meena, N. L. Heda and B. L. Ahuja  
Presented in International E-Workshop on Computational Condensed Matter Physics and Materials Science (IWCCMP-2013), Organized by ABV-Indian Institute of Information Technology and Management, Gwalior, November 27-29, 2013.
181. Electronic properties and Compton profiles of ZrSSe<sub>2</sub>  
K. K. Suthar, A. R. Jani, J. Sahariya and B. L. Ahuja  
Presented in 3<sup>rd</sup> National Conference on Advanced Materials and Radiation Physics (AMRP-2013), Organized by Sant Longowal Institute of Engineering and Technology, Longowal (Punjab), November 22-23, 2013.
182. Compton scattering study of ZrB<sub>2</sub> using high energy  $\gamma$ -rays  
Samir Bhatt and B. L. Ahuja  
Presented in 3<sup>rd</sup> National Conference on Advanced Materials and Radiation Physics (AMRP-2013), Organized by Sant Longowal Institute of Engineering and Technology, Longowal (Punjab), November 22-23, 2013.
183. Electronic Structure of Explosive Materials using Compton Scattering Study  
P. Jain, J. Sahariya, H. S. Mund, M. Sharma and B. L. Ahuja

Presented in 19<sup>th</sup> ISCB International Conference, Organized by Indian Society of Chemists and Biologists at ML Sukhadia University, March 2-5, 2013.

184. Magnetisation in 5% Ni doped  $\text{La}_{0.7}\text{Ca}_{0.3}\text{MnO}_3$   
A. Sharma, H.S. Mund, J. Sahariya, A. Dashora, S. Chandra, Y. Sakurai, M. Itou and B.L. Ahuja  
Presented in 19<sup>th</sup> ISCB International Conference, Organized by Indian Society of Chemists and Biologists at ML Sukhadia University, March 2-5, 2013.
185. Electronic properties of rare earth dioxide  $\text{CeO}_2$   
S. Sharma, J. Sahariya, A. Sharma, H.S. Mund and B.L. Ahuja  
Presented in 19<sup>th</sup> ISCB International Conference, Organized by Indian Society of Chemists and Biologists at ML Sukhadia University, March 2-5, 2013.
186. Electronic Structure Study of Nd and Gd Sesquioxides: A Compton Scattering Study  
J. Sahariya, A.M. Ghaleb, F.M. Mohammad and B. L. Ahuja  
Presented in 19<sup>th</sup> ISCB International Conference, Organized by Indian Society of Chemists and Biologists at ML Sukhadia University, March 2-5, 2013.
187. Band structure and electronic properties of transition metal chalcogenide  $\text{WTe}_2$   
G. Arora and B. L. Ahuja  
Presented in 19<sup>th</sup> ISCB International Conference, Organized by Indian Society of Chemists and Biologists at ML Sukhadia University, March 2-5, 2013.
188. Compton profile study of rare earth oxides  $\text{Nd}_2\text{O}_3$  and  $\text{Gd}_2\text{O}_3$   
J. Sahariya, S. Khera, A.M. Ghaleb, F.M. Mohammad and B. L. Ahuja  
Presented in National Conference on Recent Advances in Materials and Devices, HinduCollege, Sonapat, Haryana. Feb. 27-28, 2013.
189. Magnetic Compton scattering: A reliable probe to investigate magnetic properties  
B. L. Ahuja  
AIP Conference Proceedings 1512, 26-29 (2013) ISBN 978-0-7354-1044-2
190. Spin momentum density of Nd using Compton spectroscopy  
J. Sahariya, S. Tiwari, A. Dashora, H. S. Mund, M. Itou, Y. Sakurai and B. L. Ahuja  
AIP Conference Proceedings 1512, 1194-1195 (2013) ISBN 978-0-7354-1044-2  
(Presented in 57<sup>th</sup> DAE –Solid State Physics Symposium, IIT Mumbai, Mumbai)
191. Real space analysis of Compton profile of Heusler alloy  $\text{Ni}_2\text{TiAl}$   
J. Sahariya, H. S. Mund and B. L. Ahuja  
AIP Conference Proceedings 1447, 1307-1308 (2012) ISBN 978-0-7354-1044-2  
(Presented in 56<sup>th</sup> DAE –Solid State Physics Symposium, SRM University, Chennai)
192. Investigation of electron momentum distribution in  $\text{Gd}_2\text{O}_3$ : A Compton scattering study

A.M. Ghaleb, F.M. Mohammad, J. Sahariya, K. C. Bhamu and B. L. Ahuja  
Presented in 3<sup>rd</sup> National Conference on Condensed Matter and Materials Physics,  
March 3-5, 2012, Vallabh Vidyanagar

193. Compton profiles and nature of bonding in tantalum chalcogenides  
K.C. Bhamu, A. Sharma, A. R. Jani and B.L. Ahuja  
Presented in National Symposium on Advances in Materials Science and  
Technology, Feb. 3-4, 2012, Ahemedabad.
194. Compton scattering and electronic properties of tungsten ditelluride  
G. Arora and B. L. Ahuja  
Presented in National Symposium on Advances in Materials Science and  
Technology, Feb. 3-4, 2012, Ahemedabad.
195. Role of oxygen atoms in bonding properties of semiconducting tungsten trioxide  
N. L. Heda, A. Dashora and B. L. Ahuja  
Presented in National Symposium on Advances in Materials Science and  
Technology, Feb. 3-4, 2012, Ahemedabad.
196. Energy band structure and Compton profile of niobium carbide  
R. Joshi, S. Sharma and B. L. Ahuja  
Presented in National Symposium on Advances in Materials Science and  
Technology, Feb. 3-4, 2012, Ahemedabad.
197. Compton scattering study of magnetocaloric compound  $GdAl_2$   
J. Sahariya, H. S. Mund and B. L. Ahuja  
Presented in 2nd National Conference on Advanced Materials and Radiation  
Physics, Nov. 2011, Longowal
198. Cohesive energy of Nd using Compton scattering technique  
J. Sahariya, H. S. Mund and B. L. Ahuja  
Presented in 2nd National Conference on Advanced Materials and Radiation  
Physics, Nov. 2011, Longowal (Best poster award)
199. Compton profile and band structure of  $\alpha$ -GeTe  
G. Arora, L. Vadkhiya and B.L. Ahuja  
Presented in National Conference on Functional Materials, Feb. 2011, Jodhpur
200. Reduction of area of solar photovoltaic panel by using appropriate solar cell  
materials  
A. Soni, C.M. Arora, V. Gupta, A. Dashora and B.L. Ahuja  
Presented in National Conference on Innovative Development in Next Decade:  
Challenges, Issues and Solutions, Feb. 2011, Jodhpur
201. Applicability of chalcopyrites  $CuXSe_2$  (X=Al, Ga and In) in solar cells  
A. Soni, A. Dashora, V. Gupta, C.M. Arora and B.L. Ahuja  
Presented in International Conference on Renewable Energy 2011, Jaipur, India

202. On the possibility of solar cell applications of iron pyrite  
L. Vadkhiya and B. L. Ahuja  
AIP Conference Proceedings 1349, ISBN 978-0-7354-0905-7  
(Presented in 55<sup>th</sup> DAE –Solid State Physics Symposium, University of Manipal, Manipal)
203. Electronic momentum densities of TiC and TiN using hybrid functional theory  
R. Joshi, K.C. Bhamu, A. Dashora and B.L. Ahuja  
Presented in NCRTTEP-2011, VP & RPTP Science College, Anand, Gujarat, India
204. Compton scattering study on the electronic properties of VC and NbC  
R. Joshi, A. Dashora and B.L. Ahuja  
Presented in National Symposium on Radiation Physics and Nano-Materials, (NSRPN- 11), Department of Physics, Panjabi University, Patiala, India
205. Electronic structure and magnetic properties of Ni<sub>2</sub>MnSn Heusler alloy  
H.S. Mund, A. Dashora, J. Sahariya, K.C. Bhamu, K.R. Priolkar, N. Lobo, M. Itou, Y. Sakurai and B.L. Ahuja  
AIP Conference Proceedings 1349, ISBN 978-0-7354-0905-7  
(Presented in 55<sup>th</sup> DAE –Solid State Physics Symposium, University of Manipal, Manipal)
206. Magnetic Properties of Co<sub>2</sub>MnO<sub>4</sub> using Magnetic Compton Scattering  
B.L. Ahuja, A. Dashora, N.L. Heda, S. Tiwari, R. Kumar, M. Itou and Y. Sakurai  
AIP Conference Proceedings 1347, ISBN 978-0-7354-0903-3  
(Presented in International Conference of Magnetic Materials (ICMM-2010), SINP, Kolkata)
207. Spin Momentum Densities of Chromium Chalcogenides  
L. Vadkhiya, A. Dashora and B. L. Ahuja  
Presented in International Conference of Magnetic Materials (ICMM-2010), SINP, Kolkata
208. Electronic and optical properties of arsenic chalcogenides  
Y. Sharma, P. Srivastava and B. L. Ahuja  
Presented in 3<sup>rd</sup> International Symposium on Material Chemistry (ISMC-2010), BARC, Mumbai
209. Role of *in-house* Compton spectrometers in probing the electronic properties  
N. L. Heda and B. L. Ahuja (Review article)  
Recent Trends in Radiation Physics Research, 25-30 (2010). (Proceedings of 18<sup>th</sup> National Symposium on Radiation Physics, Himanshu Publications, Udaipur 2009). ISBN No. 978-81-7906-227-2
210. Electronic structure of Bi<sub>2</sub>S<sub>3</sub> and Bi<sub>2</sub>Se<sub>3</sub> using Compton spectroscopy  
Y. Sharma, P. Srivastava, G. Ahmed, A. Dashora, L. Vadkhiya and B. L. Ahuja  
Recent Trends in Radiation Physics Research, 323-324 (2010). (Proceedings of 18<sup>th</sup> National Symposium on Radiation Physics, Himanshu Publications, Udaipur 2009).

ISBN No. 978-81-7906-227-2

211. Magnetic Compton scattering study of spin moment in Bi doped  $\text{Co}_2\text{MnO}_4$   
B. L. Ahuja, A. Dashora, N. L. Heda, R. Kumar, M. Itou and Y. Sakurai  
Recent Trends in Radiation Physics Research, 325-326 (2010). (Proceedings of 18<sup>th</sup>  
National Symposium on Radiation Physics, Himanshu Publications, Udaipur 2009).  
[BEST PAPER AWARD] ISBN No. 978-81-7906-227-2
212. Electron momentum density in  $\text{NiWO}_4$  using Compton scattering technique  
H. Mishra, N. Yadav, A. Dashora, L. Vadkhiya and B. L. Ahuja  
Recent Trends in Radiation Physics Research, 327-328 (2010). Ed. B.L. Ahuja  
(Proceedings of 18<sup>th</sup> National Symposium on Radiation Physics, Himanshu  
Publications, Udaipur 2009). ISBN No. 978-81-7906-227-2
213. Compton scattering study of  $\text{HgBr}_2$  and  $\text{HgI}_2$   
G. Ahmed, Y. Sharma, M. Sharma, S. Tiwari, H. S. Mund, J. Sahariya, G. Arora, R.  
Jain, H. Malhotra and B. L. Ahuja  
Recent Trends in Radiation Physics Research, 329-330 (2010). Ed. B.L. Ahuja  
(Proceedings of 18<sup>th</sup> National Symposium on Radiation Physics, Himanshu  
Publications, Udaipur 2009). ISBN No. 978-81-7906-227-2
214. Electronic properties of CdTe using Compton scattering technique  
V. Raykar, G. Choudhary and B.L. Ahuja  
Recent Trends in Radiation Physics Research, 335-336 (2010) Ed. B.L. Ahuja  
(Proceedings of 18<sup>th</sup> National Symposium on Radiation Physics, Himanshu  
Publications, Udaipur 2009). ISBN No. 978-81-7906-227-2
215. Compton and photoemission spectroscopies of  $\text{WO}_3$   
S. Tiwari, A. Dashora, G. Ahmed, D. M. Phase and B. L. Ahuja  
Solid State Physics 54, 715-16 (2009). (Proceedings of Solid State Physics  
Symposium).
216. Electronic structure and momentum densities of tantalum nitride  
A. Dashora and B. L. Ahuja  
Solid State Physics 54, 713-14 (2009). (Proceedings of Solid State Physics  
Symposium).
217. Compton profiles and electronic properties of ZnO and CdO  
G. Choudhary, V. Raykar and B. L. Ahuja  
Solid State Physics 54, 717-18 (2009). (Proceedings of Solid State Physics  
Symposium).
218. Electronic structure of some transition metal halides and alloys using Compton  
scattering technique  
G. Ahmed (Thesis presentation: supervised by Prof. B.L. Ahuja)  
Solid State Physics 54, 133-34 (2009). (Proceedings of Solid State Physics  
Symposium).

219. Magnetic Compton scattering study of  $\text{Ni}_2\text{Mn}_{1.4}\text{Sn}_{0.6}$   
B. L. Ahuja, N.L. Heda, Y. Sharma, A. Dashora, L. Vadkhiya, K. R. S. Priolkar, M. Itou and Y. Sakurai  
Presented in Sagamore XVI (International Conference on charge, spin and momentum density) Santa Fe, New Mexico, USA (2009).
220. Electronic properties and Compton profiles of  $\text{FeS}_2$   
Y. Sharma, N. L. Heda, M. Sharma and B. L. Ahuja  
Presented in Sagamore XVI (International Conference on charge, spin and momentum density) Santa Fe, New Mexico, USA (2009).
221. Temperature dependent spin momentum densities in Ni-Mn-In shape memory alloys  
B. L. Ahuja, N.L. Heda, K. R. S. Priolkar, A. Dashora, L. Vadkhiya, M. Itou and Y. Sakurai  
Presented in Sagamore XVI (International Conference on charge, spin and momentum density) Santa Fe, New Mexico, USA (2009).
222. Electronic structure calculations and momentum densities of  $2\text{H-TaS}_2$   
A. Dashora, A. J. Patel, A. R. Jani, N. L. Heda, L. Vadkhiya and B. L. Ahuja  
Solid State Physics 53, 827-28 (2008). (Proceedings of Solid State Physics Symposium).
223. A magnetic Compton scattering study of a ferromagnetic shape memory alloy:  $\text{Mn}_2\text{NiGa}$   
B.L. Ahuja, G. Ahmed, M. Itou, Y. Sakurai, S. Banik and S. R. Barman  
Solid State Physics 53, 1093-94 (2008). (Proceedings of Solid State Physics Symposium).
224. Compton spectroscopy of some binary alloys and compounds  
G. Arora (Thesis presentation: supervised by Prof. B.L. Ahuja)  
Solid State Physics 53, 117-18 (2008) (Proceedings of Solid State Physics Symposium).
225. Compton scattering study of  $\text{InN}$  using  $^{241}\text{Am}$   $\gamma$ -ray source  
V. Sharma and B.L. Ahuja  
Presented in National Seminar on Radiation and Materials (NSRM08) at Punjabi Univ., Patiala, (2008).
226. Electronic structure of praseodymium and erbium using Compton scattering technique  
S. Khera and B.L. Ahuja  
Presented in National Seminar on Radiation and Materials (NSRM08) at Punjabi Univ., Patiala, (2008)
227. Compton scattering study of  $\text{GeS}$ ,  $\text{GeSe}$  and  $\text{GeTe}$   
A. Rathor and B. L. Ahuja  
Presented in National Seminar on Radiation and Materials (NSRM08) at Punjabi Univ., Patiala, (2008).

228. Electronic structure of AgI using Compton scattering technique  
A. Marwal, K.R. Soni, A. Rathor and B.L. Ahuja  
Presented in National Seminar on Radiation and Materials (NSRM08) at Punjabi Univ., Patiala, (2008).
229. Characterization of electronic properties of WSe<sub>2</sub> using Compton spectroscopy  
G. Arora, Y. Sharma, G. Ahmed and B. L. Ahuja  
Solid State Physics 52, 512-13 (2007).  
(Proceedings of Solid State Physics Symposium).
230. Electronic structure of some semiconductors using Compton scattering technique  
N. L. Heda and B. L. Ahuja  
Solid State Physics 52, 1189-90 (2007).  
(Proceedings of Solid State Physics Symposium).
231. A study of bonding in AgCl and AgBr using Compton scattering technique  
A. Rathor, V. Sharma, G. Ahmed and B. L. Ahuja  
Solid State Physics 52, 925-26 (2007)  
(Proceedings of Solid State Physics Symposium).
232. Electronic structure of metals and alloys using Compton profiles  
B. L. Ahuja  
Invited talk in “Seventeenth National Symposium on Radiation Physics (NSRP-17)  
at Saha Institute of Nuclear Physics, Kolkata in November 2007.
233. Compton scattering study of shape memory alloys  
B. L. Ahuja and V. Sharma  
Invited talk in “International Conference on Ferromagnetic Shape Memory Alloys (FSMA) 2007” at S N Bose National Centre for Basic Sciences, Kolkata, India in November 2007
234. Directional Compton profile study of  $\beta$ -brass  
V. Vyas, Y. C. Sharma, V. Sharma, A. Rathor, B. L. Ahuja and B. K. Sharma  
Presented in International Conference on Condensed Matter Physics, University of Rajasthan Jaipur (2007)
235. Compton profile study of some mercury chalcogenides  
G. Arora and B. L. Ahuja  
Presented in International Conference on Condensed Matter Physics at University of Rajasthan in November (2007).
236. Compton profile and electronic structure calculations of rhodium  
V. Sharma and B.L. Ahuja  
Presented in Summer School on ab-initio Modeling in Solid State Chemistry at University of Torino, Torino, Italy in September (2007).
237. Compton profile study of As and As<sub>2</sub>Se<sub>3</sub>



- Y. C. Sharma, V. Vyas, N. L. Heda, B. L. Ahuja and B. K. Sharma  
Presented in Summer School on Ab-initio Modeling in Solid State Chemistry at University of Torino, Torino, Italy in September (2007).
238. Compton scattering: A reliable probe for verification of band structure calculations  
B. L. Ahuja  
Presented in 14<sup>th</sup> WIEN2K – Workshop at Institute of High Performance Computing, Singapore (2007).
239. Compton profile and electronic band structure calculation of WS<sub>2</sub>  
Y. Sharma, G. Arora, V. Sharma and B. L. Ahuja  
Presented in 14<sup>th</sup> WIEN2K-Workshop at Institute of High Performance Computing, Singapore (2007).
240. Compton profiles and energy bands of lead chalcogenides  
N. L. Heda and B. L. Ahuja  
Presented in 6<sup>th</sup> International Conference on Inelastic X-ray Scattering 2007 at Awaji, Japan in May 2007.
241. Magnetic Compton scattering study of Ni<sub>2+x</sub>Mn<sub>1-x</sub>Ga ferromagnetic shape-memory alloys  
B. K. Sharma, B. L. Ahuja, S. Mathur, N. L. Heda, M. Itou, A. Andrejczuk, Y. Sakurai, A. Chakrabarti, S. Banik, A. M. Awasthi and S. R. Barman  
Presented in 6<sup>th</sup> International Conference on Inelastic X-ray Scattering 2007 at Awaji, Japan in May 2007.
242. Compton profile study of polycrystalline AlN and As<sub>2</sub>Se<sub>3</sub>  
B. K. Sharma, V. Vyas, Y. C. Sharma, V. Purvia and B. L. Ahuja  
Presented in 6<sup>th</sup> International Conference on Inelastic X-ray Scattering 2007 at Awaji, Japan in May 2007.
243. Role of Compton profiles in the verification of band structure calculations  
B. L. Ahuja  
Invited talk in symposium on “Radiation Sources, Detection and Applications (SRSDA07)” at Department of Physics, Punjabi University, Patiala in February 2007.
244. Compton profile study of HgI<sub>2</sub> using <sup>137</sup>Cs and <sup>241</sup>Am Compton spectrometers  
G. Ahmed, M. Sharma and B. L. Ahuja  
Presented in NUCAR (Nuclear and Radiochemistry) conference in Baroda in February 2007 [BEST POSTER AWARD].
245. Compton profile of InSb: Theory (LCAO) and experiment  
Y. Sharma and B. L. Ahuja  
Presented in National Conference in Condensed Matter and Material Physics (CMMP) at University of Rajasthan, Jaipur, February 2007.[BEST POSTER AWARD].

246. Study of electron momentum density in lead using 661.65 keV  $\gamma$ -rays  
M. Sharma and B. L. Ahuja  
Presented in National Conference in Condensed Matter and Material Physics (CMMP) at University of Rajasthan, Jaipur, February 2007.
247. Electronic structure study of arsenic using Compton spectroscopy  
Y. C. Sharma, V. Vyas, S. Mathur, B. L. Ahuja and B. K. Sharma  
Presented in National Conference in Condensed Matter and Material Physics (CMMP) at University of Rajasthan, Jaipur, February 2007.
248. Electronic structure of AlN by Compton profile  
V. Vyas, Y. C. Sharma, V. Purvia, G. Sharma, B. K. Sharma, N. L. Heda, B. L. Ahuja and K. B. Joshi  
Presented in National Conference in Condensed Matter and Material Physics (CMMP) at University of Rajasthan, Jaipur, February 2007.
249. A study of chemical bonding in GaN and InN using electron momentum densities  
V. Sharma, A. Rathor, N. L. Heda, M. Sharma and B. L. Ahuja  
Solid State Physics 51, 579-80 (2006)  
Proceedings of Solid State Physics Symposium).
250. Electronic states in Pr and Er using derivative of Compton profiles  
S. Khera, V. Sharma, A. Rathor, N. L. Heda and B. L. Ahuja  
Solid State Physics 51, 577-78 (2006)  
Proceedings of Solid State Physics Symposium).
251. Compton profile of InSb: Theory (LCAO) and Experiment  
Y. Sharma and B. L. Ahuja  
Presented in summer school on Ab-initio Simulation of Crystalline Systems at Washington State University and Michigan Tech University Spokane, Washington U.S.A. in September (2006).
252. Electronic structure of Ta and Pb: Band structure and experimental Compton profile study  
M. Sharma and B. L. Ahuja  
Presented in summer school on Ab-initio Modeling in Solid State Chemistry at Deptt. of Chemistry, University of Torino, Torino, Italy in September (2006).
253. The role of Compton profiles in the verification of band structure calculations  
N. L. Heda, S. Mathur and B. L. Ahuja  
Presented in summer school on Ab-initio Modeling in Solid State Chemistry at Deptt. of Chemistry, University of Torino, Torino, Italy in September (2006).
254. High resolution Compton scattering study of Nb<sub>50</sub>Mo<sub>50</sub>  
B. K. Sharma, B. L. Ahuja, A. Shukla, M. J. Cooper, Y. Tanaka, S. Kaprzyk, P. E. Mijnarends and A. Bansil  
Presented in SAGAMORE XV Conference on "Electron Charge, Spin and Momentum Densities" at University of Warwick, Coventry, UK in August (2006).

255. Energy bands and Compton profiles of some cadmium chalcogenides  
B. L. Ahuja, N. L. Heda and S. Mathur  
Presented in SAGAMORE XV Conference on “Electron Charge, Spin and Momentum Densities” at University of Warwick, Coventry, UK in August (2006).
256. Magnetic Compton scattering study of first order magnetic transition in Ir doped  $\text{CeFe}_2$   
B. L. Ahuja, B. K. Sharma, V. Purvia, A. Koizumi, T. Nagao, A. Omura, T. Kawai and N. Sakai  
Presented in SAGAMORE XV Conference on “Electron Charge, Spin and Momentum Densities” at Univ. of Warwick, Coventry, UK in August (2006).
257. A high energy Compton scattering study of gadolinium and dysprosium  
S. Khera, N. L. Heda, S. Mathur and B. L. Ahuja  
Presented in conference on “Laser, Smart material and Radiation Physics (LSRP06)” at Department of Physics, SLIET, Longowal (2006).
258. Electronic saranchana may Compton spectroscopy ki mahatta  
B. L. Ahuja, N. L. Heda, S. khera and S. Mathur  
Smarika Akhil Bhartiya Rajbhasha Takniki Sangoshthi, Solid State Physics Laboratory, New Delhi 11 (2006).
259. Compton profile analysis of CdS and CdTe  
N. L. Heda, S. Mathur and B. L. Ahuja  
Solid State Physics (India) 50, 543-44 (2005) (Proceedings of DAESolid State Physics Symposium).
260. Experimental verification of energy bands of tantalum  
B. L. Ahuja, M. Sharma, S. Mathur and N. L. Heda  
Solid State Physics (India) 50, 545-46 (2005) (Proceedings of DAE Solid State Physics Symposium).
261. Electronic structure of some semiconductors using CRYSTAL03 code  
S. Mathur and B. L. Ahuja  
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