UNIVERSITY OF KOTA, KOTA

Faculty Details Performa for UOK website

Name	**Dr. N.L. Heda**
Designation	**Assistant Professor of Physics**
Address (Office)	Room No. 201, First Floor, Academic Block, Department of Pure and Applied Physics, MBS Marg, Near Kabir Circle, University of Kota, KOTA-324005 (Rajasthan) India
Phone No.	**Office :+91-744-2471038 (Telefax)**
Mobile	**+91-9352132940**
E-mail	**nlheda@yahoo.co.in; nlheda@uok.ac.in**

Educational Qualifications

Degree	University	Year
Ph.D. (Physics)	M.L.S. University, Udaipur (India)	2007
Title: Electronic structure of some semiconductors using Compton scattering technique		
M.Sc. (Physics)	M.D.S. University, Ajmer (India)	2003

Career Profile

- Assistant Professor of Physics at Department of Pure & Applied Physics, University of Kota, Kota (India) (current, since 30 August 2008).
- Lecturer in Physics at Department of Pure & Applied Physics, University of Kota, Kota (India).
- Research Associate at Department of Physics, University College of Science, M.L.S. University, Udaipur (India) [A Defence Research and Development Organization (DRDO), New Delhi funded major research project].
- Junior Research Fellow at Department of Physics, University College of Science, M.L.S. University, Udaipur (India) [A DRDO, New Delhi funded major research project].
- Guest Faculty in Physics at Department of Physics, University College of Science, M.L.S. University, Udaipur (India).

Area of Interest/Specialization (Research Experience: More than 13 and half years)

Ph.D. (Supervision): 04 (running)

- Compton scattering measurements using ^{137}Cs and ^{241}Am based gamma-rays.
- Magnetic Compton scattering measurements using synchrotron radiations.
- *Ab-initio* computations using Linear combination of atomic orbital (LCAO) method, Full potential linearized augmented plane wave (FP-LAPW) scheme and Spin polarized relativistic Korringa-Khon-Rostoker (SPR-KKR) approach.

Subject Taught (Teaching Experience: 13 sessions)	
Name of Course	Name of Paper
M.Phil. (Physics)	Condensed Matter Physics (Theory)
M.Sc. (Physics)	Mathematical Physics and Computational Techniques (Theory); Solid State Physics (Theory); Mathematical Methods in Physics (Theory); Advanced Electronics (Theory); Statistical Mechanics (Theory); Practicals
B.Sc. (Physics Hons.)	Computer Oriented Numerical and Statistical Methods (Theory); Statistical and Thermal Physics (Theory); Elementary Quantum Mechanics (Theory); Solid State Physics (Theory), Practicals
B.Sc. (Maths)	Thermodynamics and Statistical Physics (Theory); Mathematical Physics (Theory); Mechanics (Theory); Practicals

Book : 01

भौतिक विज्ञान, कक्षा 11, संयोजक : एम. एल. कालरा एवं लेखकगण - **एन. एल. हेड़ा**, ए. के. गुप्ता, एम्. एस. यादव, रक्षपाल सिंह, □ी. एस. शेखावत व ए. एस. जोधा, राजस्थान माध्यमिक शिक्षा बो□, अजमेर व राजस्थान राज्य पाठ्यपुस्तक मं□ल, जयपुर द्वारा प्रकाशित (2017) |

Publication Profile: 78

(a) Research Papers published in Refereed/Peer Reviews Journals: **38**

1. Temperature dependent magnetic Compton profiles and first-principles strategies of quaternary half-Heusler alloy Co1-xCuxMnSb($0 \leq x \leq 0.8$), Kishor Kumar, Alpa Dashora, **N.L. Heda**, H. Sakurai, N. Tsuji, M. Itou, Y. Sakurai and B.L. Ahuja, J. Phys.: Condens. Matter (2017) inpress.
2. Study of electronic structure and Compton profiles of transition metal diborides, S. Bhatt, **N.L. Heda**, Kishor Kumar and B.L. Ahuja, Physica B **518**, 13-19 (2017).
3. Electronic and optical response of Cr-doped $MoSe_2$ and WSe_2: Compton measurements and first-principles strategies, Kishor Kumar, **N.L. Heda**, A.R. Jani and B.L. Ahuja, J. Phys. Chem. Solids **107**, 23-31 (2017).
4. Electron momentum distribution and electronic response of ceramic borides, **N.L.Heda**, B.S. Meena, H.S. Mund, Jagrati Sahariya, Kishor Kumar and B.L. Ahuja, Physica B **509**, 16-23 (2017).
5. The effect of Cr substitution on the structural, electronic and magnetic properties of pulsed laser deposited $NiFe_2O_4$ thin films, Kalpana Panwara, Shailja Tiwaria, Komal Bapna, **N.L. Heda**, R.J. Choudhary, D.M. Phase and B.L. Ahuja, J. Magn. Magn. Mater. **421**, 25-30 (2017).
6. Electronic properties of mixed molybdenum dichalcogenide MoTeSe: LCAO calculations and Compton spectroscopy, Ushma Ahuja, Kishor Kumar, Ritu Joshi and **N.L. Heda,** Physica B **492**, 16-22 (2016).

7. Electronic and optical properties of ceramic Sc_2O_3 and Y_2O_3: Compton spectroscopy and first principles calculations, B.L. Ahuja, Sonu Sharma, **N.L. Heda**, S. Tiwari, Kishore Kumar, B.S. Meena and S. Bhatt, J. Phys. Chem. Solids **92**, 53-63 (2016).
8. Compton profiles and Mulliken's populations of cobalt, nickel and copper tungstates: Experiment and theory, B.S. Meena, **N.L. Heda**, Kishor Kumar, Samir Bhatt, H.S. Mund and B.L. Ahuja, Physica B **484**, 1-6 (2016).
9. Structural and magnetic studies of Cr doped nickel ferrite thin films, Kalpana Panwar, **N.L. Heda**, Shailja Tiwari, Komal Bapna, R.J. Choudhary, D.M. Phase and B.L. Ahuja, AIP Conf. Proc. **1731**, 080025-1 to 3 (2016).
10. Electronic properties of $CdWO_4$: Use of hybrid exchange and correlation functionals, B.S. Meena, **N.L. Heda**, H.S. Mund and B.L. Ahuja, AIP Conf. Proc. **1731**, 090016-1 to 3 (2016).
11. Compton profiles and electronic structure of monoclinic zinc and cadmium tungstate, B.S. Meena, **N.L. Heda,** H.S. Mund and B.L. Ahuja, Rad. Phys. Chem. **117**, 93-101 (2015).
12. Ab-initio calculations for electronic structure and momentum densities of samarium sesquioxide, Sonu Sharma, **N.L. Heda**, K.K. Suthar, Samir Bhatt, Khushboo Sharma and B.L. Ahuja, Comp. Mat. Sci. **104**, 205-211 (2015).
13. Electronic properties and Compton scattering studies of monoclinic tungsten dioxide, **N.L. Heda** and U. Ahuja, Rad. Phys. Chem. **106**, 33-39 (2015).
14. Compton scattering and charge transfer in Er substituted $DyAl_2$, B.L. Ahuja, F.M. Mohammad, S.F. Mohammed, Jagrati Sahariya, H.S. Mund and **N.L. Heda**, J. Phys. Chem. Solids **77,** 50-55 (2015).
15. Electronic structure and cohesive properties of GaN, Gunjan Arora, H.S. Mund, V. Sharma, **N.L. Heda**, B.L. Ahuja, Indian J. Pure Appl. Phys. **53**, 328-334 (2015).
16. Role of oxygen atoms in bonding properties of semiconducting tungsten trioxide, **N.L. Heda**, Alpa Dashora, Jagrati Sahariya and B.L. Ahuja, Solid State Phenomena **209**, 156-59 (2014).
17. Electronic properties of RDX and HMX: Compton scattering experiment and first-principles calculation, B.L. Ahuja, Pradeep Jain, Jagrati Sahariya, **N.L. Heda** and Pramod Soni, J. Phys. Chem. A **117**, 5685-92 (2013).
18. Electronic properties and electron momentum density of monoclinic WO_3, **N.L. Heda** and B.L. Ahuja, Comp. Mat. Sci. **72,** 49-53 (2013).
19. Magnetic properties of Co_2MnO_4 using magnetic Compton scattering, B.L. Ahuja, A. Dashora, **N.L. Heda,** S. Tiwari, R. Kumar, M. Itou and Y. Sakurai, AIP Conf. Proc. **1347**, 202-05 (2011).
20. Reversal of orbital magnetic moment on substitution of Bi in multiferroic Co_2MnO_4: A magnetic Compton scattering study, B.L. Ahuja, A. Dashora, **N.L. Heda**, S. Tiwari, N.E. Rajeevan, M. Itou, Y. Sakurai and R. Kumar, Appl. Phys. Lett. **97,** 212502-1 to 3 (2010).

21. Temperature dependent spin momentum densities in Ni-Mn-In alloys, B.L. Ahuja, Alpa Dashora, **N.L. Heda**, K.R. Priolkar, L. Vadkhiya, M. Itou, Nelson Lobo, Y. Sakurai, Aparna Chakrabarti, Sanjay Singh and S.R. Barman, J. Phys.: Condens. Matter **22**, 446001-1 to 11 (2010).
22. Electronic properties and Compton profiles of molybdenum dichalcogenides, **N.L. Heda**, Alpa Dashora, A. Marwal, Y. Sharma, S.K. Srivastava, G. Ahmed, R. Jain and B.L. Ahuja, J. Phys. Chem. Solids **71**, 187-93 (2010).
23. Directional Compton profiles and energy bands of palladium, G. Choudhary, **N.L. Heda**, G. Ahmed, V. Raykar, B.K. Sharma and B.L. Ahuja, Asian J. Chem. **21**, S203-06 (2009).
24. Nature of bonding in chromium chalcogenides: A Compton profile study, L. Vadkhiya, **N.L. Heda**, Alpa Dashora and B.L. Ahuja, Asian J. Chem. **21**, S199-202 (2009).
25. Electronic structure of TaC using Compton scattering technique, Alpa Dashora, L. Vadkhiya, **N.L. Heda**, Y. Sharma and B.L. Ahuja, Asian J. Chem. **21**, S195-98 (2009).
26. Study of electronic structure and Compton profiles of PbS and PbSe, **N.L. Heda**, A. Rathor, V. Sharma, G. Ahmed, Y. Sharma and B.L. Ahuja, J. Alloys Compounds **463**, 47-54 (2008).
27. A charge Compton profile study of Ni_2MnGa: Theory and experiment, G. Ahmed, B.L. Ahuja, **N.L. Heda**, V. Sharma, A. Rathor, B.K. Sharma, M. Itou, Y. Sakurai and S. Banik, Adv. Mat. Res. **52**, 181-86 (2008).
28. Compton profiles and band structure calculations of IV-VI layered compounds GeS and GeSe, A. Rathor, V. Sharma, **N.L. Heda**, Y. Sharma and B.L. Ahuja, Rad. Phys. Chem. **77**, 391-400 (2008).
29. Electron momentum density in ZnSe: Theory and experiment, B.L. Ahuja and **N.L. Heda,** Rad. Phys. Chem. **76**, 921-28 (2007).
30. Magnetic Compton scattering study of $Ni_{2+x}Mn_{1-x}Ga$ ferromagnetic shape-memory alloys, B.L. Ahuja, B.K. Sharma, S. Mathur, **N.L. Heda**, M. Itou, A. Andrejczuk, Y. Sakurai, A. Chakrabarti, S. Banik, A.M. Awasthi and S.R. Barman, Phys. Rev. B **75**, 134403-1 to 9 (2007).
31. On a low intensity ^{241}Am Compton spectrometer for measurement of electron momentum density, B.L. Ahuja and **N.L. Heda**, Pramana-J. Phys. **68**, 843-50 (2007).
32. Compton profiles and band structure calculations of CdS and CdTe, **N.L. Heda**, S. Mathur, B.L. Ahuja and B.K. Sharma, Phys. Stat. Solidi (b) **244**, 1070-81 (2007).
33. Compton profile study of aluminium nitride, V. Vyas, Y.C. Sharma, V. Purvia, **N.L. Heda**, Y. Sharma, B.L. Ahuja and B.K. Sharma, Z. Naturforsch. **62a,** 703-10 (2007).
34. Compton profiles of CdS, CdSe and CdTe: Theory and experiment, **N.L. Heda**, S. Mathur and B.L. Ahuja, Asian J. Chem. **18,** 3275-78 (2006). **[Impact Factor: 0.14].**
35. Use of a lowest intensity ^{241}Am Compton spectrometer for the measurement of directional Compton profiles of ZnSe, B.L. Ahuja and **N.L. Heda,** Z. Naturforsch. **61a,** 364-70 (2006).

36. Electronic structure of gadolinium and dysprosium using Compton scattering technique, S. Khera, **N.L. Heda**, S. Mathur and B.L. Ahuja, Z. Naturforsch. **61a,** 299-305 (2006).
37. Compton profiles study of tin, B.L. Ahuja, S. Khera, S. Mathur and **N.L. Heda,** Phys. Stat. Solidi (b) **243**, 625-34 (2006).
38. Compton profile study of thulium, H. Malhotra, **N.L. Heda** and B.L. Ahuja, Phys. Stat. Solidi (b) **242**, 1036-42 (2005).

(b) Research Papers in Proceedings of Conferences/Symposium **(book form): 15**

39. Mulliken's Population and Compton Profiles of AWO_4 (A=Co, Ni, Cu and Zn) Using B3PW Method, Bhoor Singh, **N.L. Heda,** S. Bhatt, Kishor Kumar, Komal Bapna, Shailja Tiwari and B.L. Ahuja, Proceedings of National Conference on "Advanced Functional Materials and Their Applications (AFMA-2015), 39-43 (2015). **[ISBN: 978-81-7233-976-0].**
40. Stable Growth of Cr Doped Nickel Ferrite Thin Films on Si (100) and (111) Substrates, Kalpana Panwar, Shailja Tiwari, Komal Bapna, **N.L. Heda**, R.J. Choudhary, D.M. Phase and B.L. Ahuja, Proceedings of National Conference on "Advanced Functional Materials and Their Applications (AFMA-2015), 55-57 (2015). **[ISBN: 978-81-7233-976-0].**
41. Role of *in-house* Compton spectrometer in probing the electronic properties, **N.L. Heda** and B.L. Ahuja, Recent Trends in Radiation Physics Research, 25-30 (2010), (Proceedings of 18th National Symposium on Radiation Physics, Himanshu Publications, New Delhi, India) [Review Article & **Invited Talk***]. **[ISBN: 978-81-7906-227-2].**
42. Compton scattering study of spin moment in Bi doped Co_2MnO_4, B.L. Ahuja, Alpa Dashora, **N.L. Heda**, Ravi Kumar, M. Itou and Y. Sakurai, Recent Trends in Radiation Physics Research, 325-26 (2010), (Proceedings of 18th National Symposium on Radiation Physics, Himanshu Publications, New Delhi, India) [*Best Poster Award*]. **[ISBN: 978-81-7906-227-2].**
43. Electronic structure calculations and momentum densities of 2H-TaS_2, Alpa Dashora, A.J. Patel, A.R. Jani, **N.L. Heda**, L. Vadkiya and B.L. Ahuja, Solid State Physics **53**, 827-28 (2008), (Proceedings of DAE Solid State Physics Symposium). **[ISBN: 978-81-8372-044-1].**
44. 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 DAE Solid State Physics Symposium) [*Ph.D. thesis presentation*]. **[ISBN: 818372035-8].**
45. 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 DAE Solid State Physics Symposium) **[ISBN: 81-8372-030-7].**
46. 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 DAE Solid State Physics Symposium). **[ISBN: 81-8372-030-7].**

47. इलेक्ट्रॉनिक संरंचना में कॉम्पटन स्पेक्ट्रोस्कोपी की महत्ता, बी.एल. आहूजा, **एन.एल. हेडा**, एस. खेड़ा व एस. माथुर, स्मारिका (अंक-5), वर्ष 2005-06, अखिल भारतीय राजभाषा तकनीकी संगोष्ठी, ठोसावस्था भोतिकी प्रयोगशाला, रक्षा अनुसंधान एवं विकास संगठन नई दिल्ली, (भारतं) 11-17 (2006).
48. Experimental verification of energy bands of tantalum, B.L. Ahuja, M. Sharma, S. Mathur and **N.L. Heda, S**olid State Physics **50,** 545-46 (2005), (Proceedings of DAE Solid State Physics Symposium). **[ISBN: 81-8372-019-6].**
49. Compton profile analysis of CdS and CdTe, **N.L. Heda**, S. Mathur and B.L. Ahuja, Solid State Physics **50**, 543-44 (2005), (Proceedings of DAE Solid State Physics Symposium). **[ISBN: 81-8372-019-6].**
50. कॉम्पटन प्रकीर्णन विधि द्वारा विभिन्न ठोसावस्था पदार्थो के इलेक्ट्रॉनिक संरचना का अध्ययन, बी.एल. आहूजा, **एन.एल. हेडा**, मुकेश शर्मा, सोनल माथुर, व हर्ष मल्होत्रा, स्मारिका, विज्ञान विशेषांक (ठोसावस्था पदार्थ एवं डिवाइसेस), मार्च 2004-2005, अखिल भारतीय राजभाषा तकनीकी संगोष्ठी, ठोसावस्था भोतिकी प्रयोगशाला, रक्षा अनुसंधान एवं विकास संगठन नई दिल्ली, (भारत) 36-47 (2005).
51. Compton profile studies of samarium and terbium using ^{137}Cs Compton spectrometer, H. Malhotra, **N.L. Heda**, M. Sharma and B.L. Ahuja, Proceedings of Nuclear and Radiochemistry Symposium (NUCAR 2005), Eds. Chander, Acharya, Tomar and Venugopal, 129-30 (2005).
52. Compton profile study of tin, B.L. Ahuja, S. Khera, S. Mathur, **N.L. Heda** and T. Kobayasi, Solid State Physics **49**, 570-71 (2004), (Proceedings of DAE Solid State Physics Symposium). **[ISBN: 81-8372-000-5]**
53. A study of bonding in CdSe using Compton scattering technique, **N.L. Heda**, M. Sharma, S. Mathur and B.L. Ahuja, Solid State Physics **49**, 568-69 (2004), (Proceedings of DAE Solid State Physics Symposium). **[ISBN: 81-8372-000-5].**

(c) Other Research Papers in Conferences/Symposium/Schools: **16**

54. कॉम्पटन प्रकीर्णन विधि व बैण्ड संरचना गणना द्वारा लेड टेलुराईड की इलेक्ट्रॉनिक संरचना का अध्ययन, **एन.एल. हेड़ा** व बी.एल. आहूजा, मोखिक प्रस्तुति, राष्ट्रीय हिंदी विज्ञान सम्मलेन 2016, राजस्थान विश्वविद्यालय, जयपुर (भारत), स्मारिका, पृष्ठ संख्या 60 (2016) |
55. Structural Properties and Magnetic Response of Bulk $Ni_{0.95}Cr_{0.05}Fe_2O_4$, K. Panwar, K. Bapna, S. Tiwari, **N.L. Heda**, R.J. Choudhary and B.L. Ahuja, Presented in "International Conference on Functional Oxides and Nanomaterials (ICFONM-2016)" during November 2016 at Saurashtra University, Rajkot (India).
56. Electronic and optical studies of cadmium tungustate, Bhoor Singh, **N.L. Heda**, Komal Bapna and B.L. Ahuja, Presented in International conference on Innovations in Science, Technology, Managagement and ell Being "2015 GITS-MTMI" at Geetanjali Institute of Technical Studies, Udaipur (India) during December 2015.

57. Effect of various kind of exchange and correlation potentials interms of the band gap of semiconductors, **N.L. Heda**, National Level "Energy Meet-2013" at Department of Pure & Applied Physics, University of Kota, Kota (India) in December 2013.
58. Electronic structure and momentum densities of $ZnWO_4$**,** B.S. Meena, **N.L. Heda** and B.L. Ahuja**,** "International E-Workshop on Computational Condensed Matter Physics and Materials Science (IWCCMP)-2013" at ABV-Indian Institute of Information Technology & Management, Gwalior (India) in November 2013.
59. Energy bands and density of states of II-VI semiconductors using *ab-initio* calculations, **N.L. Heda**, National Level "Energy Meet-2012" at Department of Pure & Applied Physics, University of Kota, Kota (India) in November 2012.
60. Temperature dependent spin momentum densities in Ni-Mn-In shape memory alloys B.L. Ahuja, **N.L. Heda**, K.R.S. Priolkar, Alpa Dashora, L. Vadkhiya, M. Itou and Y. Sakurai, SAGAMORE XVI International Conference entitled "Electron Charge, Spin and Momentum Densities" at Santa Fe, New Mexico (USA) in August 2009.
61. Magnetic Compton scattering study of $Ni_2Mn_{1.4}Sn_{0.6}$, B.L. Ahuja, **N.L. Heda**, Y. Sharma, Alpa Dashora, L. Vadkhiya, K.R.S. Priolkar, M. Itou and Y. Sakurai, SAGAMORE XVI International Conference entitled "Electron Charge, Spin and Momentum Densities" at Santa Fe, New Mexico (USA) in August 2009.
62. Electronic properties and Compton profiles of FeS_2, Y. Sharma, **N.L. Heda**, M. Sharma and B.L. Ahuja, SAGAMORE XVI International Conference entitled "Electron Charge, Spin and Momentum Densities" at Santa Fe, New Mexico (USA) in August 2009.
63. Compton profile study of As and As_2Se_3, Y.C. Sharma, V. Vyas, **N.L. Heda**, B.L. Ahuja and B.K. Sharma, International Summer School entitled "*Ab-initio* Modeling in Solid State Chemistry" at Department of Chemistry, University of Torino, Torino (Italy) in September 2007.
64. Compton profiles and energy bands of lead chalcogenides, **N.L. Heda** and B.L. Ahuja, 6^{th} International Conference entitled "Inelastic X-ray Scattering (IXS-2007)" at Awaji (Japan) in May 2007.
65. Magnetic Compton scattering study of $Ni_{2+x}Mn_{1-x}Ga$ 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, 6^{th} International Conference entitled "Inelastic X-ray Scattering (IXS-2007)" at Awaji (Japan) in May 2007.
66. 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, National Conference entitled "Condensed Matter and Material Physics (CMMP-2007)" at Department of Physics, University of Rajasthan, Jaipur (India) in February 2007.
67. The role of Compton profiles in the verification of band structure calculations, **N.L. Heda**, S. Mathur and B.L. Ahuja, International Summer School entitled "*Ab-initio* Modeling in Solid State Chemistry" at Department of Chemistry, University of Torino, Torino (Italy) in September 2006.

68. Energy bands and Compton profiles of some cadmium chalcogenides, B.L. Ahuja, **N.L. Heda** and S. Mathur, SAGAMORE XV International Conference entitled "Electron Charge, Spin and Momentum Densities" at University of Warwick, United Kingdom in August 2006.
69. A high energy Compton scattering study of gadolinium and dysprosium**,** S. Khera, **N.L. Heda**, S. Mathur and B.L. Ahuja, National conference entitled "Laser, Smart Material and Radiation Physics (LSRP06)" at Department of Physics, Sant Longowal Institute of Engineering & Technology, Longowal (India) in March 2006.

(d) Invited Talks: **10 (09+01*)**

70. Online Submission of a Research Paper, **N.L. Heda**, "Orientation Programme-IV", University Grant Commission-Human Resource and Development Centre (UGC-HRDC), M.D.S. University, Ajmer (India) in February 2017.
71. View of Compton scattering data handaling and verification of ab-initio computations, **N.L. Heda**, UGC-HRDC, M.D.S. University, Ajmer sponsered "One Week Short-term Course", University of Kota, Kota (India).
72. Ab-initio computations within LCAO: A reliable approximation for electronic structure, **N.L. Heda,** National Workshop entitled "Computational Electronics and Nanotechnology (CENT-2016)" at Department of Physics, Manipal University Jaipur in November 2016.
73. How to submit research paper online, **N.L. Heda**, Ph.D. Course work, University of Kota, Kota (India) in May 2016.
74. Electronic properties through Compton scattering, **N.L. Heda**, "UGC-DSA Workshop on Materials Characterization: Experimental Techniques" at Department of Physics, M.L. Sukhadia University, Udaipur (India) in March 2015.
75. A*b-initio* Calculation within LCAO Approximations: A Reliable Tool for Electronic Properties**, N.L. Heda,** "National Conference on Material Science (NCMS-2014)" at Department of Physics, Mewar University, Gangrar, Chittorgarh (India) in October 2014.
76. Role of electron momentum densities measurements in the verification of *ab-initio* calculations, **N.L. Heda**, National Symposium on "Emerging Trends in Physics for Ionizing Radiations, Aerosols and Material Science (ETPRAM-13)" at Department of Physics, Punjabi University, Patiala (India) in December 2013.
77. Interpretation of *ab-initio* computations using electron momentum density measurements, **N.L. Heda**, Refresher Course in Experimental Physics, Department of Pure & Applied Physics, University of Kota, Kota (India) in January 2014.
78. Online submission of a research paper to an international/national journal, **N.L. Heda**, Ph.D. Course work, University of Kota, Kota (India) in November 2012 (two talks).

(e) Citations: **182** (as per http://scholar.google.com/citations)

Citations in various International Journals namely ACSNANO, Applied Physics Letters, Advanced Materials Research, AIP Conference Proceedings, Applied Radiation Isotope, Computational Materials Science, Electrochimica Acta, Europhysics Letter, Inorganic Chemistry, Inorganic Materials, Journal of Physical Chemistry A, Journal of Alloys and Compounds, Journal of Applied Physics, Journal of Electronic Materials, Journal of Magnetic Materials, Journal of Material Chemistry, Journal of Molecular Structure: Theochem, Journal of Physics & Chemistry of Solids, Journal of Physics D: Applied Physics, Journal of Physics: Condensed Matter, Journal of Material Science: Materials in Electronics, Key Engineering Materials, Materials Research Bulletin, Materials Science Forum, Metals, Nano Letters, New Journal of Physics, Nuclear Instruments and Methods in Physics B, Physical Review B, Physical Status Solidi (b), Physics Letters A, Phase Transitions: A Multinational Journal, Physica B: Condensed Matter, Physica Scripta, Pramana-Journal of Physics, Review of Scientific Instruments, Radiation Physics and Chemistry, Solid State Sciences Solid State Phenomena, Surface Science, The European Physical Journal B-Condensed Matter and Complex Systems, Materials, Journal of Superconductivity & Novel Magnetism, etc.

(f) h-index: 9 & i10-index: 9 as per Google Scholar (http://scholar.google.com/citations).

Organization/Involvement in Conference/Seminar/Symposium/School/Meet: 11

- Coordinator of UGC-HRDC, M.D.S. University, Ajmer sponsered One Week Short-term Course entitled “Separation Techniques and Instrumental Methods of Analysis” at University of Kota, Kota (India), January 30-February 04, 2017.
- Coordinator of "National Conference on Energy Technologies, Materials and Issues (NCETMI) as Energy Meet-2014" at University of Kota, Kota (India), November 14-15, 2014.
- Member of National Advisory Committee of "National Conference on Material Science-2014 (NCMS-2014)" at Mewar University, Chittorgarh (India), October 17-18, 2014.
- Co-coordinator of "National School on Quantum Mechanics" at University of Kota, Kota (India), February 18-22, 2014.
- Co-convener National Level "Energy Meet 2013" at University of Kota, Kota (India), December 02, 2013.
- Coordinator of "National School on Quantum Mechanics" at University of Kota, Kota (India), March 05-09, 2013
- Coordinator of National Level "Energy Meet 2012" at University of Kota, Kota (India), November 22, 2012.
- Member of organizing committee of “National Workshop on Quantum Mechanics” at University of Kota, Kota (India), January 27-30, 2012.
- Member in local organizing committee of “First International Conference on Road Safety Vision 2020 (ICRSV-2020)” at M.L.S. University, Udaipur (India), May 21-22, 2011.

- Member of organizing committee of National Level "Energy Meet-2010" at University of Kota, Kota (India), February 24, 2010.
- Member of local organizing committee of *"18th National Symposium on Radiation Physics (NSRP-18)"* at M.L.S. University, Udaipur (India), November 19-21, 2009.

Conference Participation:27

(a) Participation in Inter-national/National Conference/Seminar/Symposium/School: **21**

Abroad

- ❖ 6th International Conference entitled *"Inelastic X-ray Scattering (IXS-2007)"* at *Awaji* **(JAPAN)** *in* May 2007.
- ❖ International Summer School entitled *"Ab-initio Modeling in Solid State Chemistry"* at Department of Chemistry, *University of Torino, Torino* **(ITALY)** *in September 2006.*

In India

- Springer Nature Author Workshop at University of Kota, Kota (India) in March 2017.
- National Workshop entitled *"Computational Electronics and Nanotechnology (CENT-2016)"* at Department of Physics, Manipal University Jaipur (India) in November 2016.
- National Conference on *"Frontiers in Research & Development on Agriculture, Biomedicinal, Chemical and Pharmaceutical Sciences"* at Mewar University Chittorgarh (India) in March 2016.
- *"UGC-DSA Workshop on Materials Characterization: Experimental Techniques"* at M.L. Sukhadia University, Udaipur (India) in March 2015 (Invited Talk)
- *"National Conference on Energy Technologies, Materials and Issues (NCETMI)* as *Energy Meet-2014*" at University of Kota, Kota (India), November 2014.
- *"National Conference on Material Science (NCMS-2014)"* at Department of Physics, Mewar University, Gangrar, Chittorgarh (India) in October 2014 (Invited Talk).
- National Symposium on *"Emerging Trends in Physics for Ionizing Radiations, Aerosols and Material Science (ETPRAM-13)"* at Department of Physics, Punjabi University, Patiala (India) in December 2013 (Invited Talk).
- National Level *"Energy Meet 2013"* at Department of Pure & Applied Physics, University of Kota, Kota (India) in December 2013.
- "National School on Quantum Mechanics" at Department of Pure & Applied Physics, University of Kota, Kota (India) in March 2013.
- National Level *"Energy Meet 2012"* at Department of Pure & Applied Physics, University of Kota, Kota (India) in November 2012.
- National Symposium on *"Advances in Materials Science and Technology"* at Department of Physics, Gujarat University, Ahmedabad (India) in February 2012.

- *"National Workshop on Quantum Mechanics"* at Department of Pure & Applied Physics, University of Kota, Kota (India) in January 2012.
- *"First International Conference on Road Safety Vision 2020 (ICRSV-2020)"* at M.L.S. University, Udaipur (India) in May 2011 {Basic Theme: Role of Education in Road Safety & Present Status of Road Safety and Future Challenges}.
- *"18th National Symposium on Radiation Physics (NSRP-18)"* at Department of Physics, M.L.S. University, Udaipur (India) in November 2009 (Invited Talk).
- Department of Atomic Energy *(DAE) Solid State Physics Symposium (India)* at Department of Physics, University of Mysore, Mysore (India) in December 2007 (*Ph.D. thesis presentation*).
- National conference entitled *"Laser, Smart Material and Radiation Physics (LSRP06)"* at Department of Physics, Sant Longowal Institute of Engineering & Technology, Longowal (India) in March 2006.
- *DAE Solid State Physics Symposium (India)* at Bhabha Atomic Research Center (BARC), Mumbai (India) in December 2005.
- National conference entitled "अखिल भारतीय राजभाषा तकनीकी संगोष्ठी" at Solid State Physics Laboratory, New Delhi (India) in March 2005 (A DRDO laboratory).
- *DAE Solid State Physics Symposium (India)* at Department of Physics, G.N.D. University, Amritsar (India) in December 2004.

(b) International Visit for Measurements: **01**

- Performed experiment entitled "Origin of Magnetism in Multiferroic Materials using Magnetic Compton Scattering" at Super Photon ring of 8 GeV **(SPring-8),** Japan Synchrotron Radiation Research Institute **(JASRI), Hyogo (Japan)** in February 2009 [Visit was fully sponsored by Department of Science & Technology, Government of India, New Delhi]**.**

(c) Participation in Orientation Programme/Refresher Course: **02**

- University Grant Commission (UGC) sponsored *"87th Orientation Programme"* organized by UGC-Academic Staff College (UGC-ASC), University of Rajasthan, Jaipur during 13 May - 08 June, 2013 [**Grade: A**].
- UGC sponsored *"Refresher Course in Information Technology"* organized by UGC-ASC, University of Rajasthan, Jaipur during 11-30 November 2013 [**Grade: A**].

(d) Other Important Scientific Meeting/Training within India and Abroad (symbolic): **03**

- Interaction Meeting of 39th Basic Sciences Committee (BSC) of Board of Research in Nuclear Science (BRNS), Department of Atomic Energy, Govt. of India, Mumbai at Department of Physics, M.L.S. University, Udaipur (India) in September 2012.
- Project Monitoring Session of Council of Scientific & Industrial Research (CSIR) at CSIR Complex, New Delhi (India) in September 2012.
- *Radiation Safety Training* at SPring-8, JASRI, Hyogo (Japan) in February 2009.

Research Projects (Involvement in Major Project as Collaboration/Appointments): 05				
Title	**Designation**	**Total Cost (in lac)**	**Funding Agency**	**Place of Project**
(a) Collaborative Research Project **(on-going)**: 01				
Electrical and magnetic properties of spinel oxides: Utilization of Indus synchrotron beamlines	Collaborators	14.59 + Overhead charges	UGC-DAE-Consortium for Scientific Research, Indore	Department of Physics, M.L.S. University, Udaipur (India)
(b) Collaborative Research Projects **(completed)**: 02				
Electronic structure of some technologically important materials **(2010-2013)**	Co-Investigator	14.00	Council of Scientific & Industrial Research (CSIR), New Delhi	Department of Physics, M.L.S. University, Udaipur (India)
Charge and magnetic Compton profiles of some alloys and compounds **(2009-2012)**	Co-Investigator	29.24	DRDO, New Delhi	
(c) Appointments in Research Projects **(completed)**: 02				
Band structure calculations of some technologically important metals and semiconductors	Research Associate	10.20	DRDO, New Delhi	Department of Physics, M.L.S. University, Udaipur (India)
Characterization of technologically important semiconductors using Compton scattering technique **(2004-2007)**	Junior Research Fellow	27.44	DRDO, New Delhi	

Award and Distinctions

- Acted/Acting as Reviewer of various International/National journals.
- *Invited Talks,* **being the youngest invited speaker** of NSRP-18 at M.L.S. University, Udaipur, ETPRAM-13 at Panjabi University, Patiala, *UGC-DSA* Workshop at M.L.S. University, Udaipur, *NCMS-2014 at* Mewar University, Chittorgarh, etc.
- Participated in an International Summer School at Department of Chemistry, *University of Torino, Torino (Italy)* where **only 40 students throughout the world were selected** [which was based on *ab-initio* computational programme].
- **Second Position in *Order of Merit*** *in M.Sc. (Physics)* by M.D.S. University, Ajmer (India) in 2003.

- **First Rank in Science-Maths discipline** of college in B.Sc. (Maths).
- **First Rank in Science discipline** of school in Senior Secondary.
- **Second Prize-winner in *Rajasthan Level Badminton Championship*** and also the Second Prize-winner in *District Level Debate* Championship.

Association with Professional Bodies

(a) Boards of Studies and Committees of Courses

Internal Member of Board of Studies in Physics and Committee of Courses in Applied Physics for the session 2008-09 and 2012-13 (partially) of University of Kota, Kota (India). Member of COC for session 2016-17 and 2017-18.

(b) Memberships

- Lifetime member of *Indian Society for Radiation Physics* (*ISRP*), Health Safety & Environment Group, Bhabha Atomic Research Center, Mumbai (India). Nominated as "**National Executive Committee Member"** for the years 2016-18 of ISRP.
- Lifetime member of "**विज्ञान भारती**".

Other Important Additional Charges in University of Kota, Kota (current)

- **Coordinator,** Vivekanand Shodh Peeth.
- **Assistant Dean Student's Welfare (ADSW).**
- **Nodal Officer** of university of **All India Survey on Higher Education (AISHE).**
- **Course Coordinator** of M.Sc. (Physics).
- **Internal Coordinator** of M.Sc. (Wildlife Science) course.
- **Coordinator,** "Human Rights Club", UOK, Kota.
- Departmental Incharge of Single Window System.

Other Scientific Activities

Involved in design, fabrication and commissioning of first ever shortest geometry and lowest intensity based 100 mCi ^{241}Am Compton spectrometer along with the installation of CRYSTAL03, XCRYSDEN, DLV, BILLY, etc. computational softwares at Compton Profile Laboratory, Department of Physics, M.L.S. University, Udaipur (India).