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Academic Qualifications: M.Sc. (H.S.) Physics, Ph. D.

Ph. D. Thesis Title: Structure and orientational order in pure and doped C₆₀ solids.

Career Profile:

Lecturer:	2-11-1999 to 1-11-2005 (P.U.)
Sr. Lecturer	2-11-2005 to 10-5-2009 (P.U.)
Reader	11-5-2009 to 10-5-2012 (P.U.)
Associate Professor	11-5-2012 to 10-5-2015 (P.U.)
Professor	11-5-2015 to Till date

Courses Taught

1. Condensed Matter Physics and material Science (UG)
2. Mathematical Physics (PG)
3. Electricity and Magnetism and electronics (UG)
4. Principles of Physics (Quantum and Statistical Mechanics) (M.Tech.)
5. Physics of Materials and Nanomaterials (M.Tech.)
6. Classical Mechanics(PG)
7. Statistical mechanics (PG)
8. Classical Electrodynamics (PG)
9. Condensed Matter Physics (PG)

Research

Research Experience: Theoretical Condensed Matter Physics

I am actively involved in application of Density functional theory to compute structure and electronic properties of different materials. We have done extensive work on exohedral and endohedral fullerenes and carbon nanotubes doped with H, Na, K, Rb, Cs, Si, Ge, Al, Ga, Ag, Cu, Au and Tl. Also working on transition metal doped oxides and semiconductors, which are materials used in spintronic applications. Full and Half Heusler alloys is another class of materials we working at. We have studied the effect of pressure and defects on electronic and magnetic properties of these materials. Nanocomposites is another area in which one of my Ph.D. student has worked. We have done experimental (with Prof. S. K. Tripathi) and first principle calculations for metal doped CdS/PVA nanocomposite. Recently one student has been assigned a problem on thermoelectric materials. In brief I would say that I am working in many different fields and is enthusiastic to do Physics of the materials at nano as well as Bulk scale.

Following is the list of students I have supervised

Degree	Name of the candidate	Title	status
Ph. D.	Ms. Devina Sharma	Size effects in cuprate superconductors and AB-initiation study of their electronic properties.	Awarded 2014
Ph.D.	Mr. Nibras Mossa Umran	Effect of endohedral doping on C60 and carbon nanotubes.	Awarded 2014
Ph.D.	Ms. Kumari Seema	Structural and electronic properties of Dilute magnetic oxides and Heusler Alloys	Awarded 2014
Ph.D.	Ms. Vaneeta Bala	Theoretical and experimental study of semiconductor /polymer nanocomposites	Awarded 2015
Ph. D.	Ms. Shobhna Dhiman	Theretical studies of doped C ₆₀ and carbon nanotubes.	Thesis Submitted
Ph.D.	Ms. Kulwinder Kaur	Theoretical investigation of thermoelectric materials	Thesis Submitted
Ph.D.	Mr. Anil Sonkusare	Development and characterization of porous silicon gas sensor	Registered
Ph.D.	Ms. Anita Rani	Study of II-VI and III-V Dilute Magnetic Semiconductors	Registered
Ph.D.	Ms. Sarita Mann	Transport properties of doped gaphene	Registered
Ph.D.	Mr. Gagandeep Singh	Order disorder phenomena in Mn based Heusler compounds	Registered
M.Phill.	Ms. Reena Devi	C, Na and H doped Endohedral C ₆₀ : DFT Calculation	Awarded 2009
M.Phill.	Ms. Anita Rani	Structure and electronic properties of doped C ₂₀ fullerenes.	Awarded 2010
M. Phill.	Ms. Kumari Seema	Structure of alkaline earth and rare earth doped C ₆₀ solids	Awarded 2010
M.Tech. NS&NT	Mr. Dheeraj Sharma	A Study of Electronic properties for Zig-Zag, Armchair & Chiral Carbon-Nanotubes	Awarded 2011

M.Tech. NS&NT	Ms. Harkiran Kaur	Alkali Metal doped Endohedral Fullerenes	2008
M.Sc. (H.S.) Physics	Ms. Rashim	Stability of Na clusters inside C ₈₄	2008
M.Tech. NS&NT	Ms. Lavnya Khanna and Harkiran Kaur	Density functional theory- A tool for simulation of Nano systems	2008
M.Sc. (H.S.) Physics	Ms. Amandeep	Dependence of binding energy and HOMO- LUMO gap on shape and size of metal clusters	2011
M.Sc. (H.S.) Physics	Ms. Ramanpreet Kaur	Structure and electronic properties of Full Heusler Alloy Co ₂ MnSi	2012
M.Sc. (H.S.) Physics	Ms. Priyanka	Calculation of elastic constants of C ₆₀ solid	2014
M.Sc. (H. S.) Physics	Ms. Gurpal Singh Khosa	Study of Thermal properties of Mg ₂ Si and Mg ₂ Ge	2015
M.Sc. (H. S.) Physics	Ms. Sofia	Thermoelectric properties of Topological semi- metals	2016
M.Sc. (H. S.) Physics	Mr. Sukhwinder Singh	Half Heusler compounds as thermoelectric materials	2016

Membership of Professional Societies:

1. Life member of Indian Physics Association (IPA)
2. Life Member of Indian Association of Physics teachers (IAPT)
3. Local coordinator to conduct NGPE Examination.
4. Founder member and secretary of Chandigarh Vigyan Parishad

Conferences Organised

1. Organized International conference on Advances in condensed and Nanomaterials (ICACNM-2011) as secretary, Feb. 2011
2. Member LOC of 1st IAPT national student symposium on Physics (2013)

3. Member of Local organizing committee of 2nd IAPT National student symposium on Physics, Deptt. Of Physics, P. U. Chandigarh held on 17-19 January 2014.
4. Member of Local organizing committee of International Seminar on Current Trends in Quantum Gases, BEC and Solitons, Department of Physics, Panjab University, Chandigarh, 3-6 March 2014

Conferences/seminars/workshops attended

1. DAE solid state physics symposium, K. U. Kurukshetra, Dec, 1998
2. National conference on recent developments in disordered materials, Deptt. of Physics, P. U. Chd., 15-16, March 2001
3. Seminar on computational techniques in Physics, Deptt. of Physics, P. U. Chandigarh, 6-7, March 2002
4. DAE solid state physics symposium, K. U. Kurukshetra, Dec, 2002
5. 91st Session of Indian Science Congress association , Panjab Univ. Chandigarh, 3-7, Jan, 2004
6. DAE solid state Physics Symposium, BARC Mumbai, 5-9, Dec. 2005
7. Ist Chandigarh Science Congress, 10-11 March, 2007
8. National conference on Recent advances in innovative materials, NIT, Hamirpur, May, 2008
9. National conference on Recent advances in condensed matter Physics, NIT, Hamirpur, 23-24 May, 2009
10. 3rd Chandigarh science congress, P. U. Chd., 26-28, Feb, 2009
11. 54th DAE solid state Physics Symposium, M S Univ. of Baroda, 14-18, Dec, 2009
12. 4th Chandigarh Science Congress, 19-20 March 2010
13. Seminar cum workshop on First principle and other simulation methods in condensed matter physics, H. P. U. Shimla, 22-29 March, 2010
14. Internantional conference on advances in condensed and nano materials, P. U. Chd., 22-26, Feb., 2011
15. 5th Chandigarh science Congress, P. U. Chd.26-28 Feb, 2011

16. International conference on Frontiers in Nanoscience nanotechnology and their applications, P. U. Chd. 16-18 Feb., 2012
17. 6th Chandigarh Science Congress, P. U. Chd. 26-28 Feb., 2012
18. National seminar on Experimental & computational techniques in material science, H. P.U. Shimla, 31-3-2012 to 2-4-2012
19. 58th DAE solid state Physics Symposium, Thapar Univ. Thapar, 17-21 Dec, 2013
20. National conference on Physics of engineering materials, DCRUST, Murthal, 15-17 March, 2013
21. 7th Chandigarh Science Congress, P. U. Chd. 1-3 March, 2013
22. 8th Chandigarh Science Congress, P. U. Chd 26-28 Feb, 2014
23. Conclave on science Education- A manifesto for India's Future 29 Nov., 2014
24. NanoSciTech 2014, P. U. Chd., 13-15 Feb, 2014
25. International conference on condensed matter physics, H P U Shimla, 4-6 Nov., 2014
26. 9th Chandigarh Science Congress, P. U. Chd, 25-27 Feb, 2015
27. Workshop on High Performance Computing, deptt. of Physics, P. U. Chd, 16-17 March 2015
28. 10th Chandigarh Science Congress, P. U. Chd, 29 Feb- 02 March, 2016

PUBLICATIONS

Journals

1. Study of Structural and Electronic Properties of Doped Arm Chair Single-Walled Carbon Nanotubes, Shobhna Dhiman, **Ranjan Kumar** and Keya Dharamvir, *Materials Today: Proceedings* 3 (2016) 1820–1827
2. DFT Study of Diluted Magnetic Semiconductor $Cd_{1-x}Cr_xS$ at $x=3.125$, Anita Rani, **Ranjan Kumar**, *Materials Today: Proceedings* 3 (2016) 1815–1819.
3. Electronic and Thermoelectric Properties of Al doped Mg₂Si Material: DFT Study, Kulwinder

- Kaur, **Ranjan Kumar**, *Materials Today: Proceedings* 3 (2016) 1785–1791.
4. Thermodynamic properties of pure and doped (B, N) graphene, Sarita Mann, Pooja Rani, **Ranjan Kumar**, Girija S. Dubey and V. K. Jindal, *RSC Adv.*, 6(2016) 12158
 5. Effect of Pressure on electronic and thermoelectric properties of Magnesium silicide : a DFT study, Kulwinder Kaur and Ranjan Kumar, *Chin. Phys. B*, 25, No. 2 (2016) 056401
 6. First principle investigation of the electronic and thermoelectric properties of Mg₂C, Kulwinder Kaur and **Ranjan Kumar**, *Chin. Phys. B* Vol. 25, No. 2 (2016) 026402
 7. Effect of Disorder on Electronic, Magnetic, and Optical Properties of Co₂CrZ Heusler Alloys (Z = Al, Ga, Si, Ge), K Seema, N. M. Umran and **Ranjan Kumar**, *J Supercond Nov Magn*, 29 (2016) 401
 8. Electrical Properties of pure and (Al, Ga & In) doped CdS/PVA Nanocomposites, Vaneeta Bala, Mamta Rani, Surya Tripathi and **Ranjan Kumar**, *Mater. Res. Express* 2 (2015) 095016
 9. DFT study of Cu and Ag clusters inside C₆₀, Shobhna Dhiman, **Ranjan Kumar** and Keya Dharamvir, *Journal of Molecular Structure* 1100 (2015) 328
 10. Stability and electronic properties of Cd_{0.75}Mn_{0.25}S and Cd_{0.75}Mn_{0.25}Se in B3 Phase, Anita Rani and **Ranjan Kumar**, *Appl. Phys. A* 120, (2015) 775-784
 11. Effect of Dopant Concentration on Electronic and Magnetic Properties of Transition Metal-Doped ZrO₂, K. Seema and **Ranjan Kumar**, *J Supercond Nov Magn*, 28 (2015) 2735
 12. Study of endohedral doped C₆₀ fullerene using model potentials, N M Umran, Narinder Kaur, K Seema and **Ranjan Kumar**, *Mater. Res. Express* 2 (2015) 055603
 13. Optical properties of Ga and In doped CdS nanocomposites: An experimental and first principles study, Vaneeta Bala, S.K. Tripathi and **Ranjan Kumar**, *Material Letters*, 149 (2015) 18-21
 14. Effect of encapsulation (Au&Ti) molecule in fullerene C₆₀ on electronic and magnetic properties, Nibras Mossa Umran and **Ranjan Kumar**, *Quantum Matter*, 4 (2015), 1–5.
 15. Effect of Variation in Dilute Limit on Electronic and Magnetic Properties of Transition Metal doped HfO₂, K Seema and **Ranjan Kumar**, *Quantum Matter*, 4 (2015), 1–6.
 16. Electronic structure and magnetic properties of quaternary Heusler alloy Co₂CrGa_{1-x}Ge_x (x=0-1), K Seema, **Ranjan Kumar**, *J Magnetism and Magnetic Materials*, 377 (2015) 70-76.
 17. Structural and electronic properties of endohedral doped SWCNTs: A DFT study, Nibras Mossa Umran, Vaneeta Bala, K. Seema and **Ranjan Kumar**, *Physica E*, 65 (2015) 68-76
 18. Correlation of photoluminescence quenching with Charge Transport in groupIII (Al,Ga&In) elements doped CdS/PVANCs: Experimental and First Principles Studies, Vaneeta Bala, S.K. Tripathi and **Ranjan Kumar**, *Materials Letters*, 132 (2014) 38–40

19. Investigations of Al:CdS/PVA nanocomposites: A joint theoretical and experimental approach, Vaneeta Bala, Mamta Sharma, S.K. Tripathi and **Ranjan Kumar**, *Materials Chemistry and Physics*, 146(2014) 523-530
20. Cyclic Voltammetry of Doped CdS Nanocomposites: Relation Between Theoretical and Experimental Band Gap, Vaneeta Bala, S. K. Tripathi, and **Ranjan Kumar**, *Journal of Nanoengineering and Nanomanufacturing*, 4 (2014)1-4
21. Theoretical investigation of endohedral complexes of Si and Ge with C₆₀ molecule, Nibras Mossa Umran and **Ranjan Kumar**, *Physica B*, 437(2014) 47–52
22. Half-metallic behavior of Co₂YZ (Y = V, Cr; Z= Al, Ga) under pressure: a DFT study, K Seema and **Ranjan Kumar**, *Appl. Phys. A* 116 (2014) 1199
23. Investigation of the electronic, magnetic and optical properties of Co₂CrZ (Z = Si, Ge) under pressure—a density functional theory study, K Seema and **Ranjan Kumar**, *Phys. Scr.* 89 (2014) 015801
24. First principal study of Fe based Full Heusler Alloys, Kumari Seema and **Ranjan Kumar**, *J. integ. Sci. Technol.*,1(2013) 41
25. AC and DC susceptibility study of sol gel synthesized Bi₂Sr₂CaCu₂O_{8+δ} Superconductor, Devina Sharma, **Ranjan Kumar** and V.P. S. Awana, *Ceram. Int.* 39 (2013) 1143
26. Temperature and field dependence of thermally activated flux flow resistance in Bi₂Sr₂CaCu₂O_{8+δ} superconductor, Devina Sharma, **Ranjan Kumar** and V.P. S. Awana, *Solid State Communications* 152 (2012) 941
27. Structure and electronic properties of H_n@C₂₀ molecule, **Ranjan Kumar** and Anita Rani, *Physica B* 406 (2011) 1173
28. Comparative experimental and density functional theory study of the physical properties of MgB₂ and AlB₂, Devina Sharma, Jagdish Kumar, Arpita Vajpayee, **Ranjan Kumar**, P.K. Ahluwalia and V.P.S. Awana, *J. Supercond. Nov. Magn.* 24 (2011) 1925
29. Structure of alkaline-earth and rare earth metal doped C₆₀ solids, Kumari Seema and **Ranjan Kumar**, *Phys. Scr.* 83 (2011) 025603
30. Influence of grain size on the superconductivity of La_{1.85}Sr_{0.15}CuO₄, Devina Sharma, **Ranjan Kumar**, H. Kishan and V.P.S. Awana, *J. Supercond. Nov. Magn.* 24 (2011) 205
31. Structure and stability of endohedral C_n@C₆₀, Reena Devi and **Ranjan Kumar**, *Modern Physics Lettres B*24 (2010)1255.

32. Phonon dynamics and thermodynamical properties of alkali metal doped MC_{60} compounds, D. Varshney, Rajendra K. Jain, **K. Ranjan**, Keya Dharamvir and V. K. Jindal, *Modern Physics Letters B* 23 (2009)2557
33. Zinc phthalocyanine thin film and chemical analyte interactions studies by density functional theory and vibrational techniques, G S S Saini, Sukhwinder Singh, Sarvpreet Kaur, **Ranjan Kumar**, Vasant Sathe and S K Tripathi, *J. Phys.: Condens. Matter* 21 (2009) 225006
34. Stability of Na metal clusters inside C_{84} and C_{60} , **Ranjan Kumar** and Harkiran Kaur, *Materials Science- an Indian Journal*, 5 (2009) 62
35. Stability of Na and H atoms inside C_{60} Molecule – DFT Calculations, Reena Devi and **Ranjan Kumar**, *Pb. Univ. Res. J (Sci.)* 58 (2008)217
36. Charge Transfer in endohedral Na doped C_{240} molecule, **Ranjan Kumar**, Harkiran Kaur and Keya Dharamvir, *Pb. Univ. Re. J (Sci.)* 58 (2008)207
37. Comparative study of alkali doped C_{60} solids, **K. Ranjan**, K. Dharamvir and V. K. Jindal, *Physica B*, 371 (2006)232
38. Bulk Properties of alkali doped C_{60} solids, **K. Ranjan**, K. Dharamvir and V. K. Jindal, *Indian J. of Pure & Applied Physics*, 43 (2005)654
39. Cohesive energy of potassium doped C_{60} solids, **K. Ranjan**, K. Dharamvir and V. K. Jindal, *Physica B*, 365 (2005)121
40. Orientational ordering and binding in alkali doped C_{60} solids, **K. Ranjan**, Sarabpreet Singh, K. Dharamvir and V. K. Jindal *Indian J. of Engineering & Materials Sciences*, 7 (2000)320.

Conference Proceedings

1. Binding in doped C_{60} solids- Effect of Coulomb correlation, **K. Ranjan**, K. Dharamvir and V. K. Jindal, *Proceedings of the DAE- Solid state Physics symposium (India)* (1998) 335
2. Madelung constant of some alkali doped C_{60} systems, **K. Ranjan**, K. Dharamvir and V. K. Jindal, *Proceedings of the DAE- Solid state Physics symposium (India)* (2002) 359
3. Effect of alkali metal (M) on the structure of M_nC_{60} solids, **K. Ranjan**, K. Dharamvir and V. K. Jindal, *Proceedings of the DAE- Solid state Physics symposium India* (2005) 561
4. Structure and ionicity of Na doped C_{60} solids, **K. Ranjan**, Keya Dharamvir and V. K. Jindal, *Chandigarh Science Congress (2007)*
5. Thermodynamics of RbC_{60} solid in FCC phase, **K. Ranjan**, N. Kaurav, D Varshney, K. Dharamvir and

- V. K. Jindal, *Proceedings of the DAE- Solid state Physics symposium India* (2007) 729
6. Stability of Na clusters inside C_{240} molecule, Harkiran Kaur, **K. Ranjan** and Keya Dharamvir, *Recent Advances in Innovative Materials (RAIM-08)* Excel India Publishers, (2008) 260.
 7. Carbon clusters inside C_{60} molecule- a DFT Calculation, Reena Devi and **Ranjan Kumar**, *Proceedings of the DAE- Solid state Physics symposium India* (2008).
 8. Structure of silicon clusters- A DFT calculation, Harkiran Kaur , Lavanya Khanna and **Ranjan Kumar**, *Chandigarh Science Congress* (26-28, Feb, 2009)
 9. Effect of interaction parameters on the thermodynamics of RbC_{60} , **Ranjan Kumar**, N. Kaurav, D. Varshney, Keya Dharamvir and V. K. Jindal, *Proceedings of National conference on Recent Advances in Condense Matter Physics, 23-24 May, 2009. pp 51*
 10. Adsorption of H atoms inside C_{20} molecule, Anita Rani, Shobhna Dhiman and **Ranjan Kumar**, *Proceedings of the DAE- Solid state Physics symposium India* (2009) 373
 11. Bulk Properties of Ba and Sr doped C_{60} solids, K. Seema and **Ranjan Kumar**, *Proceedings of the DAE- Solid state Physics symposium India* (2009) 731
 12. Stability of nitrogen substituted C_{20} fullerene: DFT calculations, Anita Devi, Shobhna Dhiman and **Ranjan Kumar**, *Chandigarh science congress, 2010.*
 13. Influence of grain size on the superconductivity of $La_{1.85}Sr_{0.15}CuO_4$ Devina Sharma, **Ranjan Kumar**, H Kishan and VPS Awana, International Conference on Superconductivity and Magnetism (ICSM), Antalya, Turkey, (April 25-30, 2010)
 14. Impact of particle size on the magneto-transport properties of $La_{1.85}Sr_{0.15}CuO_4$ Devina Sharma, **Ranjan Kumar** and VPS Awana, *International conference on quantum effects in solids of todot (I-CONQUEST), National Physical Laboratory, New Delhi, (20-23 Dec, 2010)*
 15. Density Functional study of provskite superconductor $MgCNi_3$, Jagdish Kumar, Devina Sharma, **Ranjan Kumar**, P K Ahluwalia and VPS Awana, *AIP Conference proceedings (ICACNM-2011) 1393, 197-198*
 16. Electronic properties of Carbon nanotubes using density functional theory, Shobhna Dhiman, Dheeraj Kumar, Nibras Mossa Umran and **Ranjan Kumar**, *AIP Conference proceedings (ICACNM-2011) 1393, 357-358*
 17. Strucrural and electronic properties of C_{20-n} Sin ($n=1-10$), Anita Rani, Seema Rani, Vaneeta Bala and **Ranjan Kumar**, *AIP Conference proceedings (ICACNM-2011) 1393, 231-232*
 18. Inter and intra granular properties of $La_{1.85}Sr_{0.15}CuO_4$ Superconductors as influenced by varying grain size, Devina Sharma, **Ranjan Kumar** and VPS Awana, *AIP Conference proceedings (ICACNM-*

- 2011) 1393, 233-234
19. Sensing of ammonia based on porous silicon sensor, Anil G. Sonkusare, Amit L Sharma, **Ranjan Kumar** and Sunita Mishra, *AIP Conference proceedings (ICACNM-2011) 1393, 359-360*
 20. Structure and Electronic properties of c-HfO₂, Seema Kumari and **Ranjan Kumar**, *International conference on Current Developments in Atomic, Molecular, Optical and Nano Physics, D. U. Delhi(14-16, Dec,2011)*
 21. The Structural and Electronic Properties of HfO₂, K. Seema, **Ranjan Kumar**, *AIP Conf. Proc. 1447, 1077 (2012). The DAE Solid State Physics Symposium (DAE - SSPS 2011), 19-23rd Dec. 2011, held at SRM university, Chennai.*
 22. Ab-initio Study of Chromium doped Cubic Hafnia, K. Seema, **Ranjan Kumar**, *CHASCON-2012, 26-28th Feb.2012, Panjab University, Chandigarh.*
 23. Search for ferromagnetism in transition metal doped monoclinic HfO₂, K. Seema, **Ranjan Kumar**, *AIP Conf Proc. 1512, 1176 (2013). The DAE Solid State Physics Symposium (DAE - SSPS 2012), 3-7th Dec. 2012, held at IIT Bombay, Mumbai.*
 24. Study of quaternary Heusler alloy Co₂CrAl_{1-x}Si_x, K. Seema, **Ranjan Kumar**, *AIP Conf Proc. 1512, 1154 (2013). The DAE Solid State Physics Symposium (DAE - SSPS 2012), 3 – 7 Dec. 2012, held at IIT Bombay, Mumbai.*
 25. Study of AlN Nanotubes, Vaneeta Bala, Nibras Mossa Umran and **Ranjan Kumar** in 6th *Chandigarh Science Congress (CHASCON) held at P.U. Chandigarh. (Feb. 26-28, 2012).*
 26. DFT Study of CdS-PVA film, Vaneeta Bala, S. K. Tripathi and **Ranjan Kumar**, *International Conference on Materials Science and Technology (ICMST 2012) held at Department of Physics, St. Thomas College, Pala, Kerala (June 10 – 14, 2012).*
 27. Effect of sintering temperature on the nature of weak links and flux pinning mechanism in La_{1.85}Sr_{0.15}CuO₄ superconductor, Devina Sharma, **Ranjan Kumar** and V P S Awana, *International Conference on Materials Science and Technology (ICMST-2012) held at Department of Physics, St. Thomas College, Pala, Kerala (June 10 – 14, 2012).*
 28. Structural and Electronic Properties of N Substituted C₂₀ Fullerene, Anita Rani, Shobhna Dhiman, and **Ranjan Kumar**, *International Journal of Nanotechnology and Applications ISSN 0973-631X Volume6, Number 3, 11-15 (2012)*

29. Computational studies of polyvinyl alcohol encapsulated tetrahedral cadmium sulphide cluster, Vaneeta Bala, S. K. Tripathi and **Ranjan Kumar**, *AIP Conf. Proc.* 1536, 301 (2013).
30. An ab-initio study of full Heusler alloy Fe_2CoGa , K. Seema, **Ranjan Kumar**, *AIP Conf Proc.* 1536, 805 (2013).
31. Influence of Al doping on Optical properties of CdS/PVA Nanocomposites: Theory and Experiment, Vaneeta Bala, S. K. Tripathi and **Ranjan Kumar**, to be published in *AIP Conf. Proc.* 1591, 456(2014)
32. Pressure Dependence of Half Metallic Behavior of Co_2VZ (Z=Si, Ge)-An *ab initio* Study, K. Seema, **Ranjan Kumar**, *AIP Conference Proceedings* **1591**, 1414 (2014).
33. Effect on magnetic properties of germanium encapsulated C_{60} Fullerene, Nibras Mossa Umran, **Ranjan Kumar**, *AIP Conf. Proc.*, 2013, 1512, 264-265.
34. Ab initio Study of Structural and Electronic Properties of $\text{Cu}_n@C_{60}$ Shobhna Dhiman, **Ranjan Kumar** and Keya Dharamvir, *AIP Conference Proceedings* **1536**, 847 (2013)
35. Density functional Study of Structural and Electronic Properties of $\text{Al}_n@C_{60}$, Shobhna Dhiman, **Ranjan Kumar** and Keya Dharamvir, *AIP Conf. Proc* 2014, 1591,1106-1108.
36. Ab initio study of nitrogen –multisubstituted neutral and positively charged C_{20} fullerene, Anita Rani and **Ranjan Kumar**, *AIP Conf. Proc* 2014, 1591, 580-582
37. $\text{Cd}_{0.9375}\text{Mn}_{0.0625}\text{S}$ diluted magnetic semiconductor: A DFT study, Anita Rani, Kulwinder Kaur, and **Ranjan Kumar**, *AIP Conference Proceedings* 1675, 030033 (2015)
38. Thermoelectric properties of Al doped Mg_2Si material, Kulwinder Kaur, Anita Rani, and **Ranjan Kumar**, *AIP Conference Proceedings* 1675, 030023 (2015)
39. Effect of disorder on electronic and magnetic properties of Co_2VGa Heusler alloy, K. Seema and **Ranjan Kumar**, *AIP Conference Proceedings* 1675, 030036(2015)
40. Silver clusters encapsulated in C_{60} : A density functional study Shobhna Dhiman, **Ranjan Kumar**, and Keya Dharamvir, *AIP Conference Proceedings* 1675, 020004 (2015)
41. DFT study of CdS-PVA film, Vaneeta Bala, S K Tripathi and **Ranjan Kumar**, *IOP Conf. Series: Materials Science and Engineering* 73 (2015) 012118
42. DFT study of Al doped armchair SWCNTs, Shobhna Dhiman, Anita Rani, **Ranjan Kumar**, Keya Dharamvir, *AIP Conference Proceedings* **1731**, 050114 (2016).
43. Effect of hydrostatic pressure on the structural and electronic properties of $\text{Cd}_{0.75}\text{Cr}_{0.25}\text{S}$, Anita Rani, Kulwinder Kaur, Shobhna Dhiman, **Ranjan Kumar**, *AIP Conference Proceedings* **1731**, 120023 (2016).

44. Ab -initio study of thermoelectric properties of Mg_2Ge , Kulwinder Kaur and **Ranjan Kumar**, AIP Conference Proceedings **1731**, 120017 (2016)