Dr. Sanjay Kumar Singh

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CAREER OBJECTIVE

I look forward to work in an environment where I can satisfy my quest for challenges and can also contribute positively to the organization in the long term and would like to take responsibilities that require qualities like honesty, patience and forbearance so as to enable myself to give the best for the interest of the organization.

Academic Record

2009 – 2014	Ph. D from School of Studies in Physics, Jiwaji University, Gwalior (M.P), India (***According to UGC 2009 Rules***). **Supervisor :** Prof. Udai Pratap Verma **Title :** *"Ab-initio studies of structural, electronic and magnetic properties of (Yb, Lu) monopnictides: a full-potential approach"*.
2007 – 2009	M.Sc. (Physics with specialization in Materials Science) Jiwaji University, Gwalior (India) [with **67.4 %]**
2002 – 2005	B.Sc. (Physics, Chemistry and Mathematics) CSJM University, Kanpur, U.P (India) [with **62.0 %]**
1999 - 2002	Higher Secondary (Physics, Chemistry, Mathematics, Hindi and English) Uttar Pradesh Examination Board. Uttar Pradesh (India) [with **60.0 %]**
1998-1999	High School (Science) Bihar School Examination Board, Patna (India) [with **52.0 %]**

Area of Specialization

Material Science, Phase transition, Electronic properties under high pressure of rare earth systems by means of full potentials (FP-LAPW) methods.

Computer Skills

Platforms	Linux (Ubuntu), Windows Xp and Windows7
Software	Gnu plot, Office and Vesta
Code Handled	WIEN2K based on DFT, GIBBS, BoltzTrap.

Foreign Visit

Boston University, USA, Boston	*In CCP2014, during 10-14 August 2014 to Present Research Paper*
DESY, Hamburg, Germany	*In IUCr13, during 8-11 Sept. 2013 to Present Research Paper*

Awards/Fellowships

DST/SERB International Travel Grant	*Department of Science and Technology/ Science & Engineering Research Board sanction foreign travel grant to attend and present research paper at the Conference on computational physics (CCP2014), Boston University, Boston, U.S.A.*
Young Scientist Award	*I have been granted the Young scientist award of the International Union of Crystallography (IUCr) in the workshop "Advances in Static and Dynamic High-Pressure Crystallography" held at DESY, Hamburg (Germany) during September 8-11, 2013.*
CSIR International Travel Grant	*Council of Scientific and Industrial Research (CSIR) sanction foreign travel grant to attend and present research paper at the WIEN2013 : Hands on Workshop on the WIEN2K Package, Pennsylvania in 2013.*
MPFTYS (2013-2014)	*I have been awarded Fellowship for training of young scientist (2013-14) of M.P. Council of Science and Technology at the 28th M.P. Young Scientist Congress held at Vigyan Bhawan, Bhopal, M.P during February 28-March 01, 2013*

June 2012 – Oct. 2012	*Project Fellow (In University Grant Commission (UGC) Project, New Delhi) at Jiwaji University, Gwalior (M.P)*
June 2010 – Sept., 2011	*Junior Research Fellowship/Project fellow (Department of Science Technology (DST), New Delhi) at Jiwaji University, Gwalior (India).*
Research/Teaching Experience	*I have five years of research experience and 3+1.5 years of teaching as a guest faculty in S.O.S. in BMT, Jiwaji University, & MITS College, Applied Science Department, Gwalior, M.P. Presently, I am guest faculty in KRGPG college, Gwalior.*

Any Other Experience

March 25-26, 2015	*Participated in national Workshop on Innovations in teaching & Research Methods organized by Madhav Institute of Technology and Science, Gwalior, M.P.*
March 28-29, 2014	*Participated in national Workshop on Teaching & Research Methods organized by QIP centre, Madhav Institute of Technology and Science, Gwalior, M.P.*
February 26-27, 2013	*Participated in Pre-Congress Workshop on MATLAB for Researchers jointly organized by MPCST & NITTTR, Bhopal.*

Extra Curriculum Activity

February 28, 2015	*Organized one day national seminar on "Chemistry for Life" under TEQIP(II) centre, by Department of Applied Science, Madhav Institute of Technology and Science, Gwalior-05, M.P., India.*
December 20-21, 2014	*Organized National Conference on Advances in Mathematical Applications for Engineering & Technology, Under TEQIP(II) by Department of Applied Science, Madhav Institute of Technology and Science, Gwalior-05, M.P., India.*
August 9, 2014	*Organized one day workshop on Emerging Trends in Material for Engineering Applications, Under TEQIP(II) by Department of Applied Science, Madhav Institute of Technology and Science,*

Gwalior-05, M.P., India.

List of Publications

Papers Published/Accepted in International Journals/Proceedings

[1] **Sanjay Kumar Singh**, Amit Anand, Jeetu Dandoriya and U. P. Verma , *High Pressure Phase Transition Properties of Lutetium Monopnictide : A Density Functional Theory Study Journal of Physics: Conference Series, CCP-2015* **(2015)** *(Accepted).*

[2] **Sanjay Kumar Singh**, Amit Anand, Jeetu Dandoriya, *High Pressure Structural Phase Transition and Electronic Properties of NdX (X = P, As, Sb) Compounds : A First Principles Study, Journal of Physics: Conference Series,CCP-2015* **(2015)** *(Accepted).*

[3] S. Chand, R. P. Singh, A. Govindan and **Sanjay Kumar Singh, "***Mechanical, spin polarized electronic and magnetic properties of TmX (X = Cu,Ag): First principle study" I. J. Mod. Phys. B,* 29 **(2015)** 1550007 (13 pages).

[4] **Sanjay Kumar Singh** and U. P. Verma, "*Investigation of high pressure phase transition and electronic properties of Lutetium Nitride" Journal of Physics: Conference Series* ***640*** (**2015**) 012029.

[5] **Sanjay Kumar Singh** and U. P. Verma, *"Ytterbium monopnictides under high pressure and high temperature: using local spin density approximation along with Hubbard corrections approach", Indian J. Phys.* 88(6):593–601**(June 2014).**

[6] **Sanjay Kumar Singh** "*Study of structural and electronic properties of NdSb employing local spin density approximation and Hubbard correction" Indian J. Phys. 88(5):501–504* ***(May 2014).***

[7] P. Rana, **Sanjay Kumar Singh,** V. Nayak and U. P. Verma *"Magnetic and thermal properties of the ground state GdNi" AIP Conf. Proc.* **1512**, 582 **(2013).**

[8] Dinesh C. Gupta and **Sanjay Kumar Singh**, "*Structural phase transition, elastic and electronic properties of TmSb and YbSb: A LSDA+U study under pressure*", ***J. Alloys Compd.*** 515, 26– 31 **(2012).**

[9] **Sanjay Kumar Singh**, P. Rana, and D. C. Gupta "*Ab-initio study of phase transition in SmAs under pressure*" ***AIP Conf. Proc.*** 1447, 127-128**,** (**2012**).

[10] **Sanjay Kumar Singh,** P. Rana, S. Kulshrestha, K. C. Singh and D. C. Gupta "*High pressure phase transition and elastic properties of LaAs : a full-potential study*", ***AIP Conf. Proc***. 1349, 121-122 (**2011**).

[11] P. Rana, S. Kulshrestha, **Sanjay Kumar Singh** and D. C. Gupta, "*First principle calculations of structural and electronic properties of CdO under high pressures*" ***AIP Conf. Proc***. 1349, 817-818 (**2011**).

[12] S. Kulshrestha, P. Rana, **Sanjay Kumar Singh** and D. C. Gupta, "*Electronic and thermal properties of HoSb under pressure: A LSDA+U study*" ***AIP Conf. Proc***. 1349, 797-798 (**2011**).

<u>Papers Presented in International / National Conferences / Symposia / Workshops</u>

[1] **Sanjay Kumar Singh** and U. P. Verma, "*Ab-initio study of structural and phase transition properties of ytterbium monopnictides under high pressure*" "Advances in Static and Dynamic High-Pressure Crystallography" DESY, Hamburg (Germany), September 8-11, (**2013)**.

[2] **Sanjay Kumar Singh** and U. P. Verma, *"Role of muffin tin radius in the study of ytterbium monopnictides under high pressure"* 28th M. P. Young Scientist Congress, M. P. Council of Science and Technology, Bhopal, February 28 - March 01, **(2013).**

[3] **Sanjay Kumar Singh** *et al*. "*Structural and Electronic Properties of NdSb: A LSDA+U Study*" AIRAPT23, BARC, Mumbai, India **(2011).**

[4] P. Rana, **Sanjay Kumar Singh** *et al*., "*Electronic and elastic properties of ZnS1-xSex super cell: full-potential calculation*" AIRAPT23, BARC, Mumbai, India **(2011).**

[5] D. C. Gupta, **Sanjay Kumar Singh** et al., "*Phase transition in LnAs (Ln= La, Ce, Pr, Nd and Sm) under high pressures: A Full- Potential Study*" The 6th Conference of the Asian Consortium on Computational Materials Science (ACCMS-6), Sept. 6–9, (**2011)**, (P077) MRS, Singapore.

[6] D. C. Gupta, P. Rana, **Sanjay Kumar Singh** et al., "*A First–Principles study of pure YN and Fe doped YN under high pressures*" The 6th Conference of the Asian Consortium on Computational Materials Science (ACCMS-6), Sep. 6–9, (**2011)**, (P043) MRS, Singapore.

[7] S. Kulshrestha, D. C. Gupta, P. Rana, **Sanjay Kumar Singh**, "*Magnetic, Structural and Electronic Properties of Rare-Earth Mono-Pnictides under High Pressures*", The 6th Conference of the Asian Consortium on Computational Materials Science (ACCMS-6), Sep. 6–9, (**2011**), (P062) MRS, Singapore.

[8] **Sanjay Kumar Singh** et al., "*Structural and Electronic Properties of LuSb: A Full-Potential Study*", CMDAYS11, 24-26 August (**2011**) Guwhati University, Gwahati.

[9] P. Rana, **Sanjay Kumar Singh** et al., "*ab-initio study of YN under high pressures : A LDA+ U approach*", CMDAYS11, 24-26 August (**2011**) Guwhati University, Gwahati.

[10] S. Kulshrestha, D. C. GUPTA, **Sanjay Kumar Singh**, P. Rana, "*Magnetic, structural and electronic properties of rare-earth mono-pnictides under high pressures*", ICMAT (**2011**) Singapore (June 26-July 01).

[11] D. C. Gupta, P. Rana, S. Kulshrestha, **Sanjay Kumar Singh**, "*Phase transitions in semiconducting nanomaterials under pressures*", ICMAT (**2011**) Singapore (June 26-July 01).

[12] P. Rana, **Sanjay Kumar Singh** et al., "*First Principle Calculations on Zincblende ZnS: A LDA Study*" CONIAPS-XIII, 13th International conference of International Academy of Physical Sciences, June 13- 17, (**2011**), UPES, Dehradun.

[13] S. Kulshrestha, Dinesh C. Gupta, **Sanjay Kumar Singh**, et al., "*Magnetic, Structural and Electronic Properties of Rare-earth Mono-pnictides Under High Pressures*" NCEMA11, 10-11 June **(2011**), Jiwaji University, Gwalior.

[14] Dinesh C. Gupta, P. Rana, S. Kulshrestha, **Sanjay Kumar Singh**, "*Phase Transitions in Semiconducting Nanomaterials Under Pressures*" NCEMA11, 10-11 June (**2011**), Jiwaji University, Gwalior.

[15] P. Rana, **Sanjay Kumar Singh** et al., "*First Principle Calculations of ZnO under High Pressures*" National Conference on Advancements and Futuristic Trends in Materials science (AFTMS), 26-27 March, (**2011**), M. J. P. Rohikhand University, Bareilly (U.P.).

[16] Dinesh C. Gupta, S. Kulshrestha, P. Rana and **Sanjay Kumar Singh**, "*Magnetic, structural and electronic properties of rare-earth mono-pnictides under high pressures*", CONIAPS-12, February 20-22, (**2010)** Abstract Booklet page 104 (P026) Allahabad University, (U.P).

[17] **Sanjay Kumar Singh** et al., "*Phase transition, elastic and electronic properties of rare-earth pnictides LnSb (Ln=Tm,Yb) : LSDA+U study under high pressures*" CONIAPS-12, February 20-22, (**2010**) Abstract Booklet page 104 (P026) Allahabad University, (U.P).

[18] **Sanjay Kumar Singh** et al., "*Structural, electronic and Phase transition properties of NdAs*" NCRTTEP **2011**, February 18-19, 2011 VP & RPTP Science College, Anand, Gujrat.

[19] S. Kulshrestha, D.C. Gupta, **Sanjay Kumar Singh** et al, "*An LSDA+U study of magnetic, structural and electronic properties of ASb (A=Ho and Er) under high pressures*", NCRTTEP (**2011)**, February 18-19, 2011 VP & RPTP Science College, Anand, Gujrat.

[20] **Sanjay Kumar Singh** et al., "*YbSb under high pressures : A full-potential study*", NSRAP, February 15, (**2011**) Govt. Holker Sc. College, Indore.

[21] P. Rana, S. Kulshrestha, **Sanjay Kumar Singhet** et al., "*Elastic and electronic properties of CdO : An LDA+U study*", NSRAP, February 15, (**2011**) Govt. Holker Sc. College, Indore.

[22] S. Kulshrestha, P. Rana, **Sanjay Kumar Singh** et al., "*A First Principles Study of Strongly Correlated ErSb*", I-ConQuEST, December 20-23, (**2010**) NPL, New Delhi.

[23] **Sanjay Kumar Singh** et al., "*High pressures study of structural, elastic and electronic properties of LnSb (Ln=Tm,Yb)*", Asia Pacific Physics Conf. 11, Nov. 14-18, (**2010**), Shanghai (China).

[24] S. Kulshrestha, P. Rana, **Sanjay Kumar Singh** and D.C. Gupta "*High pressures study of magnetic, structural and electronic properties of DySb*", ESPA 2010, the 7th Congress on Electronic Structure: Principles and Applications, June 29-July 2, (**2010**), University of Oviedo, Spain.

[25] K. C. Singh, **Sanjay Kumar Singh** et al., "*Effect of covalency, zero-point energy and charge transfer on the phase transition and elastic properties of CaO and EuO under pressure*" Seminar on Scientific Development and Their Impact on Society March 26-27 (**2010**) page 25 (P-16), Jiwaji University Gwalior (M.P).

[26] K. C Singh, **Sanjay Kumar Singh** et al., "*The Phase Transition and Elastic Behavior of Th-Chalcogenides*" National Conference on Recent Developments in Mechanical Engineering (RDME-2010) February 19-20, (**2010**) Proceedings pp 110-117.

[27] P. Rana, **Sanjay Kumar Singh** et al., "*First-Principles Calculations of Electronic, Elastic and Thermal Properties of YSb under High Pressure*" 11th International conference of the International Academy of Physical Sciences CONIAPS-11, February 20-22, (**2010**) Abstract Booklet pp 96 (P012) Allahabad University, Allahabad (U.P).

[28] S. Kulshrestha, **Sanjay Kumar Singh** et al., "*High Pressure Study of Magnetic, Structural and Electronic Properties of DySb*" 11th International conference of the International Academy of Physical Sciences CONIAPS-11, February 20-22, (**2010**) Abstract Booklet page 104 (P026) Allahabad University, Allahabad (U.P).

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References

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I hereby declare that all the information given above is true to the best of my knowledge and belief.

Date : 28 / 05 / 2016 (**SANJAY KUMAR SINGH)**