Dr. Vijay Raj Singh
Associate Professor
Department of Physics,
Central University of South Bihar
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Education

Ph.D.	Physics, The University of Tokyo, Japan *Advisor*: Prof. Atsushi Fujimori	2011
M. Tech.	Materials Science & Engineering, Indian institute of Technology Kanpur, India *Advisor*: Prof. Ashish Garg	2008
M.Sc.	Physics, University of Allahabad, India *Advisor*: Prof. Indra Meharotra	2004

Professional Appointments

Associate Professor	Physics, Central University of South Bihar, India	16th Sept. 2019-Cont.
Assistant Professor	Physics, Central University of Kashmir, India	29th Sept. 2016-15th Sept. 2019
Research Scientist	Physics, Lawrence Berkeley National Laboratory & Boston University, US *Advisor*: Prof. Kevin E. Smith	1st Nov. 2014-Sept. 28th 2016
Postdoc. Res. Assoc.	Physics & Nebraska Center for Materials & Nanoscience, The University of Nebraska-Lincoln, US *Advisor*: Prof. Xia Hong	1st Nov. 2011-31th Oct 2014
Research Scientist	Max-Planck Institute for Microstructure Physics, Halle (Saale) Germany *Advisor*: Dr. Ionela Vrejoiu	1st Mar 2008-30th Sept 2008
Project Associate	Materials Science & Engineering, IIT Mumbai, India *Advisor*: Prof. IndradevSamajdar	1st Jul. 2004-31st Dec. 2005

Fellowships and Awards

1.	Council of Scientific and Industrial Research- Junior Research Fellowship (**CSIR-JRF**: **AIR- 3**)	Govt. of India	2005
2.	Ministry of Human Resource Development Fellowship (**JEST: Percentile : 94.11withAIR- 146**)	Govt. of India	2005
3.	Shyama Prasad Mukherjee (SPM) Fellowship	Govt. of India	2006

4.	Ministry of Human Resource Development fellowship (MHRD) (**GATE**: **Percentile: 99.7 with AIR-7**)	Govt. of India	2006
5.	Best poster award in "14th National Seminar on Ferroelectrics & Dielectrics workshop"	IIT Kharagpur	2006
6.	MonbukagakushoFellowship (MEXT), Ministry of Education, Culture, Sports, Science and Technology	Govt. of Japan	2008
7.	Ministry of Education, Korean Government Scholarship (KGS)	Govt. of S. Korea	2008
8.	Cash Prize of Rs. 20000.0 from dean of student affair for publishing research papers in M. Tech.	IIT Kanpur	2008
9.	Sao Paulo Research Foundation Fellowship (FAPESP) (NOT Availed)	Govt of Brazil	2011
10.	Japan Society for the Promotion of Science (JSPS) Fellowship (NOT Availed)	Govt of Japan	2011
11.	Humboldt Research Fellowship (NOT Availed)	Govt of Germany	2014
12.	Marie Curie Fellowship (NOT Availed)	European Commission	2014
13.	Early Career Research Award (ECRA)	SERB-DST	2018

Research Interests

1. Understanding Magnetic and Electronic Properties correlation in Functional Materials - Magnetic oxide materials, Half Metals, Semiconducting Materials and Multiferroics
2. X-ray Absorption Spectroscopy (XAS), Photoemission Spectroscopy (PES) and X-ray Magnetic Circular Dichroism (XMCD).
3. Electrical transport and Magnetic properties measurements.

Research Grant:

1. UGC-FRPS, Start-Up Research Grant, "Graphene Based Sensing of Tumor Cells GRAPHBIOSEN" (V. R. Singh, PI) (Year.12. 2017-11.2020) Rs. 10 Lacs
2. DST-SERB, Early Career Research Award, "Thin Film Skyrmion Spin Textures" (V. R. Singh, PI) (Year. 12. 2018-11.2021) Rs. 30 Lacs
3. IUAC, New Delhi, BTR-3 Grants "Ion beam induced disorder in metal-insulator - transition and magnetic properties of Vanadium oxide" (V. R. Singh, PI) (Year. 1 Feb. 2021-1 Feb..2024) Rs. 10.11 Lacs.
4. UGC-DAE CSR, Indore "Synthesis and Characterization of Thin Film Skyrmion" (V. R. Singh, PI) (Year. 1 April. 2022-1 March..2025) Rs. 12.49 Lacs
5. DST-SERB, Core Research Grant, "Advance Spectroscopic Studies of Vanadates to Understand its Electronic Structure and Conductivity Transitions" (V. R. Singh, PI) (Year. 01. 2023-12.2026) Rs. 46 Lacs.

Professional Activities

1. **Editorial Board**:

   - Journal of Space Science and Astrophysics (JSSA) (Web: http://www.hoajonline.com/spacesciastrophys/editorialboard)
   - GSTF Journal of Physics and Applications (JPA) (Web: http://globalstf.org/jpa-editorial-board/)
   - International Journal of Advance Research in Science and Engineering (IJARSE)
   - J. of Scientific Research in Physical & Mathematical Sciences (JSRPMS) (Web:http://www.jsrpms.com/Editorial.php)

2. **Journal reviews**: Nature, Nature Physics, Nature Materials, Nature Communications, Scientific Reports, Physical Review Letters, Physical Review B,Nano Letters, Small, New J. of Physics, Advanced Materials, Advanced Functional Materials, ACS Applied Materials & Interfaces, J. of Applied Physics, Applied Physics Letters, IEEE Transactions on Magnetics; Physica B: Condensed Matter, J. Magnetism and Magnetic Materials, J. of Physics: Condensed Matter, Journal of Physics and Chemistry of Solids, Materials Science & Engineering B, Chemical Physics, Polymer Composites, Solid State Communications, Thin Solid Films, J. of Alloys and Compounds, Acta Materials, Surface and Coatings Technology, J. of Space Science and Astrophysics, Journal of Materials Science & Technology, Surface Review & Letters and so on.

3. **Session chairs**: Indo-Japan Symposium(2010); Group seminar at Tokyo university in Physics (2008, 2009, 2010, 2011).

4. UCARE selection committee -2013 & 2014 at University of Nebraska-Lincoln, USA for evaluates the abstracts and making award decisions for deserving undergraduate students.

5. **International Collaborations**:

   i. Prof. A. Fujimori & Prof. T. Fukumura, University of Tokyo, Japan

   ii. Prof. M. Kawasaki, Tohoku University, Japan

   iii. Prof. M. Yamamoto, Hokkaido University, Japan

   iv. Prof. M. Azuma, Tokyo Institute of Technology, Japan

   v. Prof. Y. Shimakawa, Kyoto University, Japan

   vi. Prof. T. Koide, KEK IMSS, Photon Factory, Japan

   vii. Prof. Y. Takeda, Prof. T. Okane, Prof. Y. Saitoh and Prof. H. Yamagami, Spring-8, Japan

   viii. Prof. D-J Huang, Prof. H-J Lin and Prof. C T Chen, National Synchrotron

Radiation Research Center, Taiwan

ix. Prof. J. Laverock,University of Bristol, UK

x. Prof. X. Hong, Prof.S. Adenwalla, Prof. E. Y. Tsymbal and Prof. J. E. Shield, University of Nebraska, US

xi. Prof. Kevin E Smith, Boston University, US

xii. Dr. Wanli Yang, Dr. S. K. Mo and Dr. J. Guo at LBNL, US

xiii. Prof. I. K. Schuller, University of California, US

6. Academic supervision:

a. Undergraduate students-

1. Bethany Rose Lamoureus at Boston University, USA
2. Wes Edington at University of Nebraska-Lincoln, USA
3. Nolan Devries at University of Nebraska-Lincoln, USA.
4. Prasoon Gupta at Indian Institute of Technology (IIT)-Kanpur, India

b. Post-graduate students-

1. Rishi Roshan Bharadwaj, Central University of South Bihar, Gaya (2019-2021)
2. Mritunjay Kumar, Central University of South Bihar, Gaya (2019-2021)
3. Priya Kumari, Central University of South Bihar, Gaya (2019-2021)
4. Sanjukta Jena, Central University of South Bihar, Gaya (2019-2021)
5. Akram Jamil at Central University of South Bihar, Gaya (2018-2020)
6. Akas Deep at Central University of South Bihar, Gaya, (2018-2020)
7. Amiya Kumar Behera at Central University of South Bihar, Gaya, (2018-2020)
8. Pushp Raj at Central University of South Bihar, Gaya, (2018-2020)

c. Ph.D. students-

1. Mufeed Zaman at Physics, CUSB Gaya (Joint Supervision with Dr Raza Shahid, JMI New Delhi) from 10.2019 -12.2022
2. Riya Dhawn at Physics, CUSB Gaya from 4.2021 to till date
3. Aradhana Kumari at Physics, CUSB Gaya from 4.2021 to till date
4. Ashutosh Kumar at Physics, CUSB Gaya (Joint Supervision with Dr Akhilananda Kumar, CUSB Gaya) from 4.2021 to till date
5. Sanjukta Jena at Physics, CUSB Gaya

7. Course Taught:

M.Sc. **B.Sc.**

1. Solid State Physics at Central University of Kashmir	Thermal Physics at Central University of Kashmir Optics at Central University of Kashmir Solid State Physics at Central University of Kashmir
1. Magnetism and Thin Films at Central University of South Bihar, Gaya 2. Experimental Techniques at Central University of South Bihar, Gaya	Thermal and Statistical Physics at Central University of South Bihar

8. <u>Departmental Committee:</u>

a. Teacher Council (29 Sept 2016-15 Sept 2019 at CUK, Srinagar)
b. Purchase Committee (29 Sept 2016 to 15 Sept 2019 at CUK, Srinagar)
c. Teacher Council (23 Dec 2019 to Onwards at CUSB, Gaya)
d. Purchase Committee (23 Dec 2019 to Onwards at CUSB, Gaya)
e. Departmental Placement committee (23 Dec 2019 to Onwards at CUSB, Gaya)
f. Departmental Alumni Committee (23 Dec 2019 to Onwards at CUSB, Gaya)

9. <u>University level Committee</u>:

a. Deputy DSW (26 April 2019-15 Sept 2019 at CUK, Srinagar)

<u>Publications:</u>

1. M. Zzaman, R. Dawn, J. B. Franklin, A. Kumari, A. Ghosh, S. K. Sahoo, V. K. Verma, R. Shahid, U. K. Goutam, K. Kumar, R. Meena, A. Kandasami, and **V. R. Singh**, "Elevated Transition Temperature of VO_2 Thin Films via Cr Doping: A Combined Electrical Transport and Electronic Structure Study" J. of Elect. Mates. (2023). [**Impact Factor: 2.0**] **doi**: https://doi.org/10.1007/s11664-023-10359-0

2. S. Jena, A. Kumari, R. Dawn, A. Hussain, V.K. Verma, H.J. Gardner, Z. Aabdin, K. Amemiya, and **V.R. Singh**, "Origin of orbital magnetic moment in e-beam evaporated $SrRuO_3$ thin films studied by soft X-ray magnetic circular dichroism" J. Alloys and Comps. **948**, 169740 (2023). [**Impact Factor: 6.4**] **doi**: https://doi.org/10.1016/j.jallcom.2023.169740

3. A. Kumari, M. Zaman, A. Kumar, **V.R. Singh** , A. Ghosh, S. K. Sahoo, A. Rahaman, Satish K. Mandal, and Satyaban Bhunia, "An Alternative Approach to Study Photo-catalytic Behavior of TiO_2 Using Synchrotron-Based Advanced Spectroscopic Techniques" J. of Mats Engg. and Perfor. Accepted (2023) [**Impact Factor: 2.03**] **doi**: https://doi.org/10.1007/s11665-023-07876-8

4. N. K. R. Nallabala, S. S. Kushvaha, A. Kumari, **V. R. Singh**, V.K. Verma, S. Kaleemulla, L. P. Singh, S. .K. Jilani, S. V. P. Vattikuti, K. R. Bakash, S. Sambasivam, and J. Shim, "Self-powered and improved photoresponsive broadband photodetecting sensors using Au/$NiFe_2O_4$/p-Si heterojunction architecture" Materials Science in Semicond. Proce. **156**, 107266 (2023). [**Impact Factor: 4.6**] **doi**: https://doi.org/10.1016/j.mssp.2022.107266

5. A. Kumari, A. Kumar, R. Dawn, J. Roy, S. Jena, R. Vinjamuri, D. Panda, S. K. Sahoo, V. K. Verma, S. Mahapatra, A. Rahaman, A. Ahlawat, M. Gupta, K. Kumar, A.Kandasami and **V. R. Singh**, "Effect of Annealing Temperature on the Structural, Electronic and Magnetic Properties of Co doped TiO_2 Nanoparticles: An Investigation by Synchrotron-Based Experimental Techniques" J. of All. and Comp. **933,** 167739(2023). [**Impact Factor: 6.4**] **doi**: https://doi.org/10.1016/j.jallcom.2022.167739

6. N. K. Singh, A. Kumar, R. Dawn, S. Jena, A. Kumari, **V. R. Singh**, M. Zzaman, R. Shahid,D. Panda, S. K. Sahoo, U. K. Goutam, V. K. Verma, K. Kumar, M. Khatravath, A. Priyam, "Resonance Photoemission Spectroscopic Study of Thermally Evaporated $NiTiO_3$ Thin Films" J. of Elect. Mats.**52**, 669–678(2023). [**Impact Factor: 2.0**] Doi: https://doi.org/10.1007/s11664-022-10037-7

7. A. Singh, R. Dawn, V. K. Verma,, D. Panda,S. K. Sahoo, K. Kumar, **V. R. Singh**, "Electronic and magnetic properties of $FeCr_2O_4$ nanoparticles by advanced synchrotron based soft X-ray magnetic circular dichroism" Physica B **647**, 414373 (2022). [**Impact Factor: 2.98**] **doi**: https://doi.org/10.1016/j.physb.2022.414373

8. V.K. Verma, S. Sakamoto, K. Ishikawa, **V.R. Singh**, K. Ishigami, G. Shibata, T. Kadono, T. Koide, S. Kuroda, A. Fujimori, "Cr doping-induced ferromagnetism in the spin-glass $Cd_{1-x}Mn_xTe$ studied by x-ray magnetic circular dichroism" Physica B **642**, 414129(2022). [**Impact Factor: 2.98**] **doi**: https://doi.org/10.1016/j.physb.2022.414129

9. M. Zzamana, J.B. Franklin, A. Kumar, R. Dawn, V.K. Verma, R. Shahid, M. K. Gupta, K. Amemiya, Y. Miura, R. Meena, A. Kandasami, **V.R. Singh**, "Effect of Cr-substitution on vanadium dioxide thin films studied by soft X-ray magnetic circular dichroism"Journal of Alloys and Compounds **918**, 165515 (2022). [**Impact Factor: 6.4**] **doi**: https://doi.org/10.1016/j.jallcom.2022.165515

10. R. Dawn, M. Zzaman, F. Faizal, C. Kiran, A. Kumari, R. Shahid, C. Panatarani, I. M. Joni, V. K. Verma, S. K. Sahoo, K. Amemiya, **V. R. Singh**, "Origin of Magnetization in Silica-coated Fe3O4 Nanoparticles Revealed by Soft X-ray Magnetic Circular Dichroism" Brazilian Journal of Physics **52** (99), 1-12 (2022). [**Impact Factor: 1.4**] **doi**: https://doi.org/10.1007/s13538-022-01102-x

11. N. K. Reddy Nallabala,V. Reddy Minnam Reddy, **V.R. Singh**,K. Rahim Bakash, S. Kumar, D. Saha,Vellaichamy Mahendran,V. Krishnaiah Kummara, G. Krishna Guntupalli, and S.V. Prabhakar Vattikuti"Enhanced photoresponse performance in GaN based symmetric type

MSMultraviolet-A and MIS ultraviolet-A to C photodetectors" Sensors & Actuators: A. Physical. **339,** 113502 (2022). [**Impact Factor: 4.3**] **doi**: 10.1016/j.sna.2022.113502

12. S. Jena, M. Zzaman, V.K. Verma, K. Ishigami, G. Shibata, T. Ishikawa, G. f. Li, M. Yamamoto, R. Shahid, T. Koide, A. Fujimori, and **V. R. Singh**, "Thickness-dependent electronic and magnetic states of Mn and Co atoms at Mn-rich $Co_2Mn_{1.20}Ge_{0.38}$/MgO interfaces via soft x-ray magnetic circular dichroism" Physica B: Phys. Conden. Matt.**627**, 413619 (2022). [**Impact Factor: 2. 98**] **doi**: 10.1016/j.physb.2021.413619

13. K. R. Nallabala, S.V. P. Vattikuti, V.K. Verma, **V.R. Singh**, S. Alhammadi, V. K. Kummara, V. Manjunath, M. Dhanalakshmi, V. R. M. Reddy, "Highly sensitive and cost-effective metal-semiconductor-metal asymmetric type Schottky metallization based ultraviolet photodetecting sensors fabricated on n-type GaN" Mats. Sci. in Semicond. Proc.**138,** 106297 (2022). [**Impact Factor: 4.6**] **doi**: 10.1016/j.mssp.2021.106297

14. A. Kumari, A. Kumara, R. Dawn, J. B. Franklin, R. Vinjamuri, S. Kr. Sahoo, U. Kr. Goutam, V. K. Verma, R. Meena, A. Kandasami, S. Mahapatra, K. Kumari, A. Kumar, and **V. R. Singh**, "Valence band structure of Cr doped VO_2 thin films: A resonant photoelectron spectroscopy study" J. of All. and Comp.**895**, 162620 (2021). [**Impact Factor: 6.4]doi**: https://doi.org/10.1016/j.jallcom.2021.162620

15. R. Dawn, M. Zzaman, R. R. Bharadwaj, C. Kiran, R. Shahid, V. K. Verma, S. K. Sahoo, K. Amemiya and **V. R. Singh**, "Direct Evidence to Control the Magnetization in Fe_3O_4 thin films by N_2 Ion Implantation: A Soft X-Ray Magnetic Circular Dichroism Study", *J. Sol-gel Sci. and Tech.* 99, 461 (2021). [**Impact Factor: 2. 6**] **doi:**https://doi.org/10.1007/s10971-021-05606-x

16. M. Kumar, V. K. Verma, and **V. R. Singh**, "Magnetic Anisotropic of Thermally Evaporated FeNi Thin Film: A Soft X-Ray Magnetic Circular Dichroism study", *Surf. Interfac. Ana.***53**, 808-813 (2021). [**Impact Factor: 1. 7**] **doi**: 10.1002/sia.6982

17. P. Kumari, M. Zzaman, S. Jena, M. Kumar, R. R. Bharadwaj, V. K. Verma, R. Shahid, K. Amemiya, and **V. R. Singh, "**Electronic and Magnetic Properties of Chemical Solution Deposited $BiFeO_3$ Thin Film: a Soft X-ray Magnetic Circular Dichroism Study**",** *J. of Supercond. and Nov. Mag.* **34**, 1119 (2021). **[Impact Factor: 1.7] doi:** https://doi.org/10.1007/s10948-021-05840-y

18. R. Nongjai, R. Samad, **V.R. Singh**, V.K. Verma, A. Kandasami, "Magnetic and electronic structures of N implanted iron oxide thin films" *J. of Mag. and Mag. Mats.***527**, 167703 (2021). **[Impact Factor: 3.01] doi:** https://doi.org/10.1016/j.jmmm.2020.167703

19. **V. R. Singh**, V. Jovic, I. Valmianski, J. G. Ramirez, B. Lamoureux, I. K. Schuller and K. E. Smith, "Irreversible metal-insulator transition in thin film VO_2 induced by soft X-ray irradiation," *Appl. Phys. Lett.* 111, 241605 (2017). **[Impact Factor: 3.4] doi:** https://doi.org/10.1063/1.5012940

20. B. Lamoureus, V. Jovic, **V. R. Singh**, and K. E. Smith, "Orbital orientation mapping of V_2O_5 thin films" *J. Appl. Phys*. **122**, 045305 (2017). **[Impact Factor:2.5]**
doi:dx.doi.org/10.1063/1.4993912

21. D. Li, Z. Xiao, H. R. Golgir, L. Jiang, **V. R. Singh**, K. Keramatnejad, K. E. Smith, X. Hong, L. Jiang, J.-F. Silvain, and Y. Lu, "Large-Area 2D/3D MoS_2-MoO_2 Heterostructures with Thermally Stable Exciton and Intriguing Electrical Transport Behaviors" Advanced Electronic Materials, **3**, 1600335 (2017). **[Impact Factor: 7.3]**
doi:10.1002/aelm.201600335

22. V. Jovic, A. J. E. Rettie, V. R. Singh, J. Zhou, B. Lamoureux, C. Mullins, H. Bluhm, J. Laverock and K. Eugene Smith, "A soft x-ray spectroscopic perspective of electron localization and transport in tungsten doped bismuth vanadate single crystals" *Phys. Chem. Chem. Phys***18**, 31958 (2016).**[Impact Factor: 3.6]**
doi:10.1039/c6cp04526j

23. B. Lamoureus, **V. R. Singh**, V. Jovic, T. Y. Su and K. E. Smith "Structural and Electronic Properties of Thermally Evaporated V_2O_5 Epitaxial Thin Films" *Thin Solid Films***615**,409-414(2016).**[Impact Factor : 2.2]**
doi: dx.doi.org/10.1016/j.tsf.2016.07.062

24. A. Rajapitamahuni, L. Zhang, M. A. Koten,**V. R. Singh**, J. D. Burton, E. Y. Tsymbal, J. E. Shield, and X. Hong, "Giant Enhancement of Magnetic Anisotropy in Ultrathin Manganite Films via Nanoscale 1D Periodic Depth Modulation" *Phys. Rev. Letts*. **116**, 187201 (2016).**[Impact Factor : 8.5]**
doi:10.1103/PhysRevLett.116.187201

25. VedranJovic, Jude Laverock, Alexander J. E. Rettie, Jianshi Zhou, C. Buddie Mullins, **Vijay Raj Singh**, Daniel Wilson, TiloSöhne, Branislav Jovic and Kevin E. Smith, "Soft X-Ray Spectroscopic Studies of the Electronic Structure in M-$BiVO_4$ (M = Mo or W) Single Crystals" *J. of Mats. Chem. A***3**, 23743 (2015). **[Impact factor: 12.7]**
doi: 10.1039/c5ta07898a

26. K. Ishigami, K. Yoshimatsu, D. Toyota, M. Takizawa, T. Yoshida, G. Shibata, T. Harano, Y. Takahashi, T. Kadono, V. K. Verma, **V. R. Singh**, Y. Takeda, T. Okane, Y. Saitoh, H. Yamagami, T. Koide, M. Oshima, H. Kumigashira, and A. Fujimori, "Thickness-dependent magnetic transition and strain-induced orbital magnetic moment in SrRuO3 thin lm studied by X-ray magnetic circular dichroism" *Phys. Rev. B***92**, 064402 (2015). **[Impact Factor: 4.0] doi:** 10.1103/PhysRevB.92.064402
27. **V. R. Singh**, V. K. Verma, K. Ishigami, G. Shibata, A. Fujimori, T. Koide, Y. Miura, M. Shirai, T. Ishikawa, G. f. Li and M. Yamamoto, "Electronic and magnetic properties of off -stoichiometric $Co_2Mn_\beta Si$/MgO interfaces studied by x-ray magnetic circular dichroism" *J. Appl. Phys.***117**, 203901 (2015). **[Impact factor: 2.5] doi:** 10.1063/1.4921538

28. L. Zhang, H. Gardner, X. Chen, **V. R. Singh** and X. Hong, "Strain Induced Modulation of the Correlated Transport in Epitaxial $Sm_{0.5}Nd_{0.5}NiO_3$ Thin Films", *J. of Phys.: Cond. Mat.***27**,132201 (2015). **[Impact Factor: 2.2] doi:**10.1088/0953-8984/27/13/132201

29. **V. R. Singh**, L. Zhang, A. Rajapitamahuni, N. Devries and X. Hong, "Non-linear transport in nanoscale phase separated colossal magnetoresistive oxide thin films" *J. Appl. Phys.***116**, 033914 (2014).**[Impact Factor:2.2] doi:** 10.1063/1.4890605

30. Y. Takahashi, T. Kadono, S. Yamamoto, **V. R. Singh**, V. K. Verma, K. Ishigami, G. Shibata, T. Harano, A. Fujimori, Y. Takeda, T. Okane, Y. Saitoh, H. Yamagami, and M. Takano "Orbital magnetic moment and coercivity of SiO_2 -coated FePt nanoparticles studied by x-ray magnetic circular dichroisms" *Phys. Rev. B***90**, 024423 (2014).**[Impact Factor: 4.0] doi:**10.1103/PhysRevB.90.024423

31. G. Shibata, K. Yoshimatsu, E. Sakai, **V. R. Singh**, V. K. Verma, K. Ishigami, T. Harano, T. Kadono, Y. Takeda, T. Okane, Y. Saitoh, H. Yamagami, A. Sawa, H. Kumigashira, M. Oshima, T. Koide, and A. Fujimori "Thickness-dependent ferromagnetic metal to paramagnetic insulator transition in $La_{0.6}Sr_{0.4}MnO_3$ thin films studied by x-ray magnetic circular dichroism" *Phys. Rev. B.***89**, 235123 (2014). **[Impact Factor: 4.0] doi:**10.1103/PhysRevB.89.235123

32. V. K. Verma, **V. R. Singh**, K. Ishigami G. Shibata, T. Harano, T. Kadono A. Fujimori, F.-H. Chang, H.-J. Lin D.-J. Huang, C. T. Chen, Yi Zhang Jing Liu, Yuanhua Lin, Ce-Wen Nan and A. Tanaka "Origin of enhanced magnetoelectric coupling in $BaTiO_3/NiFe_2O_4$ multilayers studied by x-ray magnetic circular dichroism" *Phys. Rev.B***89**, 115128 (2014). **[Impact Factor: 4.0] doi:**10.1103/PhysRevB.89.115128

33. **V. R. Singh**, V. K. Verma, K. Ishigami, G. Shibata, Y. Yamazaki, A. Fujimori, Y. Takeda, T. Okane, Y. Saitoh, H. Yamagami, Y. Nakamura, M. Azuma and Y. Shimakawa "Enhanced ferromagnetic moment in Co-doped $BiFeO_3$ thin films studied by soft X-ray circular dichroism" *J. Appl. Phys.***114**, 103905 (2013). **[Impact Factor: 2.5]doi:** 10.1063/1.4821024

34. T. Harano, G. Shibata, K. Ishigami, Y. Takashashi, V. K. Verma, **V. R. Singh**, T. Kadono, A. Fujimori, Y. Takeda, T. Okane, Y. Saitoh, H. Yamagami, T. Koide, H. Yamada, A. Sawa, M. Kawasaki, Y. Tokura, A. Tanaka "Role of doped Ru in coercivity-enhanced $La_{0.6}Sr_{0.4}MnO_3$ thin film studied by x-ray magnetic circular dichroism" *Appl. Phys. Lett.***102**, 222404, (2013). **[Impact Factor: 3.4] doi:**dx.doi.org/10.1063/1.4808090

35. T. Kataoka, Y. Yamazaki, **V. R. Singh**, Y. Sakamoto, K. Ishigami, V. K. Verma, A. Fujimori, F.-H. Chang, H.-J. Lin, D. J. Huang, C. T. Chen, D. Asakura, T. Koide, A. Tanaka, D. Karmakar, S. K. Mandal, T. K. Nath and I. Dasgupta," X-ray absorption spectroscopy and X-ray magnetic circular dichroism studies of transition-metal-co-doped ZnO nano-particles" *e-J. Surf. Sci. Tech.***10**, 594 (2012).**[Impact Factor:0.6] doi:**10.1380/ejssnt.2012.594

36. **V. R. Singh**, V. K. Verma, K. Ishigami, G.Shibata, T. Kadono , A. Fujimori, D. Asakura , T. Koide, Y. Miura , M. Shirai, L.-f. Li, T. Ishikawa and M. Yamamoto "Effects of off-

stoichiometry on the spin polarization at the $Co_2Mn_\beta Ge_{0.38}$/MgO interfaces: X-ray magnetic circular dichroism study" *Phys. Rev. B***86**,144412, (2012). **[Impact Factor: 4.0]**
doi:10.1103/PhysRevB.86.144412

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Presentations

Seminars

1. **V. R. Singh,** "X-Ray Absorption Spectroscopy and X-Ray Magnetic Circular Dichroism Investigations of Co-doped $BiFeO_3$ Films" at Chemistry, Indian Institute of Technology Delhi, India. — 10th Mar. 2011
2. **V. R. Singh**, "X-ray Magnetic Circular Dichroism Study of Oxide-based Magnetic Materials" at Nebraska Center for Materials and Nanoscience, at University of Nebraska-Lincoln, USA. Link: http://events.unl.edu/2011/12/02/62794/ — 2th Dec. 2011
3. **V. R. Singh**, "X-ray magnetic circular dichroism study of room temperature ferromagnetism in Co-doped TiO2 thin films" at Materials Science Davison, at Argonne National Laboratory, USA. Link: http://www.msd.anl.gov/home/seminars/singh-111313 — 13th Nov. 2013
4. **V. R. Singh**, "X-Ray Absorption Spectroscopy and X-Ray Magnetic Circular Dichroism Investigations of Co-doped $BiFeO_3$ Films" at Institute of Nanoscience and Technology at Mohali, India. Link: http://www.inst.ac.in/news_event.php — 18th Mar. 2014
5. **V. R. Singh,** "X-ray magnetic circular dichroism study of oxide-based magnetic materials" at Physics, University of Hyderabad, India. — 29th Dec. 2016
6. **V. R. Singh,** "X-ray magnetic circular dichroism study of Co doped TiO_2 Thin Films" at Physics and Chemistry of Advanced Materials, Motihari India. — 23 Sept 2019
7. **V. R. Singh,** "X-ray magnetic circular dichroism study of oxide-based magnetic materials" at Advanced Materials and Nuclear Science, Gaya, India. — 29 Feb 2020
8. **V R Singh** in 3rd International Conference on Nanomaterials Science and Mechanical Engineering (ICNMSME2020) as an Invited Speaker with lecture on " Effect of disorder on MIT of VO2 by Soft X-Ray Irradiation" at University of Aveiro, Purtgal — 7-10 July 2020
9. **V. R. Singh,** as resource person in One-week National Workshop on "Advanced Physical Tools and Techniques for Materials Characterization "X-ray magnetic circular Dichroism Study of Co doped $BiFeO_3$ thin films" at MGCUB Motihari India — 28 Jul-3 Aug 2020
10. **V. R. Singh,** as resource person in AICTE - Short Term Training Prog. on nanotechnology and functional materials Phase-II "X-ray Magnetic Circular Dichroism Study of Magnetic Materials Using thin films" Department of Mechanical Engineering, S V College of Engineering, Tirupati India — 17-24 Aug 2020
11. **V. R. Singh,** as resource person in One-Week Faculty Development Program in Frontiers in Material Science Research "X-ray magnetic circular dichroism study of multiferroic thin films" Physics, MITS Madanapalle, AP, India — 24-28 Aug 2020
12. **V. R. Singh**, as resource person in TEQIP-III Sponsored online workshop on Functional Materials "Magnetic Properties of Thin Films of Magnetic Materials Using Advanced Characterization Techniques" at Physics, MNIT Jaipur — 9 Sep 2020

Contributed

13. L. Zhang , H. J. Gardner , **V. R. Singh** , X. Hong, "Ferroelectric Field Effect in Ultrathin Epitaxial $Sm_{0.5}Nd_{0.5}NiO_3$ Films" at American Physical Society, Texas, USA Link:http://meeting.aps.org/Meeting/MAR15/Session/B6.11 — 2 Mar. 2015
14. A. Rajapitamahuni , L. Zhang , J. Burton , **V. Singh** , E. Tsymbal , X. Hong, "Enhancement of Magnetic Anisotropy in Ultrathin Epitaxial $La_{0.67}Sr_{0.33}MnO_3$ Thin Films via Nanostructure Engineering" at American Physical Society, Texas, USA Link: http://meeting.aps.org/Meeting/MAR15/Session/G32.10 — 3 March 2015
15. L. Zhang , **V. Singh** , A. Rajapitamahuni , X. Hong, "Anisotropic magnetoresistance in colossal magnetoresistive oxide $La_{1-x}Sr_xMnO_3$ thin films" at American Physical Society, Colorado, USA Link:http://meetings.aps.org/Meeting/MAR14/Session/Z6.2 — 7 Mar., 2014
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18. A. Rajapitamahuni , **V. R. Singh** , Z. Xiao and Xia Hong, "Graphene Field Effect Sensors for the Study of Nanoscale Ferroelectric Thin Films" at American Physical Society, Maryland, USA Link:http://meetings.aps.org/Meeting/MAR13/Session/R21.4 — 20 Mar. 2013
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20. **V. R. Singh**, "Carrier-induced ferromagnetism of cobalt-doped anatase TiO2 thin films studied by soft x-ray magnetic circular dichroism" at Indo-Japan workshop at University of Tokyo, Japan. Link: http://wyvern.phys.s.u-tokyo.ac.jp/f/indo-japan2011/program.htm — 2nd Feb. 2011
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Posters

25. **V. R. Singh**, A. K. Rajapitamahuni, and X. Hong, "Engineering non-linear I-V characteristics in epitaxial manganite thin films" University of Nebraska-Lincoln, USA. Link: https://www.src.org/library/publication/p069360/ — 10th Feb. 2014
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