Curriculum Vitae

Dr. MADHVENDRA NATH TRIPATHI

AREA OF INTEREST

- Computational material science
- Thermoelectric materials research
- Transport properties of solids
- Thermal, electrical and thermoelectric properties of low-dimensional systems

TECHNICAL SKILLS

- Computation based on DFT using VASP, Abinit, PWscf (Quantum Espresso-3.2.3) simulation packages.
- Working experience on HITACHI SR 11000 Supercomputer.
- Programming languages and skill in various softwares such as Matlab, XcrysDen, Materials Studio, Adobe Illustrator, Origin etc.

SCIENTIFIC ACHIEVMENTS

Professional/Research Positions

- **Associate Professor,** Department of Pure and Applied Physics, Guru Ghasidas Vishwavidyalaya (Central University), May 2011-till date.
- **Post-Doctoral Research**, Institute for Materials Research (IMR), Tohoku University, Sendai, Japan, January 2009-March, 2011.
- **Assistant Professor,** Department of Physics, CMP College, University of Allahabad from 20 January 2001- April 2011.
- **Visiting Scientist,** Institute for Materials Research (IMR), Tohoku University, Sendai, Japan, December 24, 2011 – January 14, 2012.
- **Visiting Scientist,** TUE-CMS (Thematic Unit of Excellence-Computational Material Science), Theoretical Science Unit, Jawaharlal Nehru Center for Advanced Scientific Research (JNCASR), Bangalore, June 29-July 13 2012.
- **Visiting Scientist,** Centre for Computational Material Science, Jawaharlal Nehru Center for Advanced Scientific Research (JNCASR), Bangalore, September 29-October 12, 2008.
- **Summer Research Fellowship** sponsored by IASc-INSA-NASI, at Jawaharlal Nehru Center for Advanced Scientific Research (JNCASR), Bangalore, May-July, 2008.
- **Research Fellow** from 20 January 2001 - 29 March 2007 in the Physics Department, University of Allahabad.
- **CSIR Junior Research Fellow (JRF)** from 22 July 2000-20 Jan 2001 in the Physics Department, University of Allahabad.

Projects

1. **UGC-MRP (F.No.: 41-1009/2012)** Amount Rs. 3.55 Laks; Density functional study of magneto-opto-electronic properties of transparent conducting oxides. (July 01, 2011-June 30, 2014)

Publications (last five years):

1. **M. N. Tripathi,** K. Shida, R. Sahara, H. Mizuseki, and Y. Kawazoe, Optoelectronic and magnetic properties of Mn-doped indium tin oxide: A first-principles study, Journal of Applied Physics112, 073105 (2012).

2. **M. N. Tripathi,** K. Shida, R. Sahara, H. Mizuseki, and Y. Kawazoe, First-principles analysis of structural and opto-electronic properties of indium tin oxide, Journal of Applied Physics 111 (10), 103110, (2012).

3. M. Khazaei, **M. N. Tripathi**, and Y. Kawazoe, First-principles simulation of cyanogen under high pressure: Formation of paracyanogen and an insulating carbon nitride solid, Physical Review B 83, 134111 (2011).

4. **M. N. Tripathi** and C. M. Bhandari, Non-monotonic behavior of $Si_{0.9}Ge_{0.1}$quantum well, Int. J. Mod. Phys. B 25(6), 813 (2011).

5. K. Shida, R. Sahara, **M. N. Tripathi**, H. Mizuseki, and Y. Kawazoe, Conductivity percolation on a cubic lattice with core-shell particles, 52 (6), 1259 (2011).

6. K. Shida, R. Sahara, **M. N. Tripathi**, H. Mizuseki, and Y. Kawazoe, Conductivity Percolation on a Cubic Lattice with Two Different Sizes of Particles, Material Transactions 52 (1), 108 (2011).

7. **M. N. Tripathi**, C. M. Bhandari, M. P. Singh, Lorenz number in Low-dimensional Structures, Physica B 405, 4818 (2010).

8. K. Shida, R. Sahara, **M. N. Tripathi**, H. Mizuseki, and Y. Kawazoe, Conductivity percolation on a square lattice with core-shell particles, Material Transactions 51(4), 771 (2010).

9. **M. N. Tripathi**, U. V. Waghmare, T. N. Ramesh and P. V. Kamath, Polytypism and Stacking Disorders in Nickel Hydroxide: A First-principles Study, Journal of The Electrochemical Society 157 (3), A280-A284 (2010).

10. K. Shida, R. Sahara, **M. N. Tripathi**, H. Mizuseki, and Y. Kawazoe, Controlling the percolation threshold of conductor-insulator composites by changing the granular size of insulators, Material Transactions 51(6), 1141 (2010).

11. K. Shida, R. Sahara, **M. N. Tripathi**, H. Mizuseki, and Y. Kawazoe, Conductivity percolation on a square lattice with two different sizes of particles, Material Transactions 50 (12), 2848 (2009).

12. **M. N. Tripathi** and C. M. Bhandari, Thermal and thermoelectric behavior of Si-Ge quantum well structures, Eur. Phys. J. B 59, 503 (2007).

Papers presented in Conference/Symposium/Seminar

International

1. M. N. Tripathi, K. Shida, R. Sahara, Hiroshi Mizuseki, Yoshiyuki Kawazoe, ACCMS-VO7, Nov.23-25, 2012, Sendai & Matshushima, Japan.
2. M. N. Tripathi, K. Shida, R. Sahara, Hiroshi Mizuseki, Yoshiyuki Kawazoe, MRS-J 2010, Annual meeting of Material Research Society-Japan, Dec.20-22, 2010, Yokohama, Japan.
3. M. N. Tripathi, K. Shida, R. Sahara, Hiroshi Mizuseki, Yoshiyuki Kawazoe, The Fifth general meeting of 5th ACCMS-VO (Asian Consortium on Computational Materials Science-Virtual Organization), December 10-13, 2010, Institute for Materials Research, Tohoku University, Sendai, Japan.
4. M. N. Tripathi, K. Shida, R. Sahara, Hiroshi Mizuseki, Yoshiyuki Kawazoe, 2010 MRS Fall Meeting: Transparent Conducting Oxides and Applications, November 29-December 2, 2010, Boston, USA.
5. M. N. Tripathi, Hiroshi Mizuseki, Yoshiyuki Kawazoe, 120th Kinkenkouenkai/2010 fall lecture meeting of IMR, 26-27 November, 2009, IMR, Sendai, Japan.
6. M. N. Tripathi, K. Shida, R. Sahara, Hiroshi Mizuseki, Yoshiyuki Kawazoe, Novosibirsk-Tohoku Global COE Conference for young scientists, 21-26 September 2010, Nikolaev Institute of Inorganic Chemistry, SB RAS, Novosibirsk, Russia.
7. M. N. Tripathi, K. Shida, R. Sahara, Hiroshi Mizuseki, Yoshiyuki Kawazoe, Spring College on Computational nanoscience, May 17-28, 2010, International centre for Theoretical Physics (ICTP), Trieste, Italy.
8. M. N. Tripathi, K. Shida, R. Sahara, Hiroshi Mizuseki, Yoshiyuki Kawazoe, Nanogakkai, Annual meeting of Society of Nanoscience and Technology, Tokyo, Japan.
9. M. N. Tripathi, Hiroshi Mizuseki, Yoshiyuki Kawazoe, 119th Kinkenkouenkai, 14-15 May, 2009, IMR, Sendai, Japan.

10. M. N. Tripathi, Hiroshi Mizuseki, Yoshiyuki Kawazoe, 4th Asian Consortium on Computational Materials Science-VO, January 12-14, 2010, Sendai, Japan. (http://www-lab.imr.edu/~vo2010/index.html)

11. M. N. Tripathi, Hiroshi Mizuseki, Yoshiyuki Kawazoe, 118th Kinkenkouenkai/2009 fall lecture meeting of IMR, 26-27 November, 2009, IMR, Sendai, Japan.

12. M. N. Tripathi, Hiroshi Mizuseki, Yoshiyuki Kawazoe, Opto-electronic and magnetic properties of the Mn-doped indium tin oxide: A first-principles study, 5thAsian Consortium on Computational Materials Science (ACCMS), September 9-11, 2009, Hanoi University of Technology, Hanoi, Vietnam. (http://www.iop.vast.ac.vn/theor/conferences/accms5/)

13. M. N. Tripathi, Hiroshi Mizuseki, Yoshiyuki Kawazoe, Electronic and optical properties of the oxidized indium tin oxide: A First principles study, Photonics and Opto-Electronics Meetings (POEM) 2009, August 8-10, 2009, Wuhan National Laboratory for Opto-Electronics (WNLO), Wuhan, China. (http://222.20.94.9/poem/)

14. **(Invited Talk)** M. N. Tripathi, Hiroshi Mizuseki, Yoshiyuki Kawazoe, Ab-initio Study of the Electronic and Optical Properties of the Oxidized Indium Tin Oxides, International Symposium on Engineering of Indium saving for Transparent Conductive film, May 26, 2009, Katahira sakura hall, Tohoku University, Sendai, Japan. (E-mail: mura@tagen.tohoku.ac.jp)

15. M. N. Tripathi, Hiroshi Mizuseki, Yoshiyuki Kawazoe, Ab-initio Study of Manganese-doped Indium Tin Oxide, 117th Kinkenkouenkai2009, May 14 -15, 2009, Institute for Materials Research, Tohoku University, Sendai, Japan.

16. M. N. Tripathi, Hiroshi Mizuseki, Yoshiyuki Kawazoe, Ab-initio study of the electronic properties of the oxidized indium tin oxide, 7th annual meeting of Society of Nano Science and Technology, May 9 -11, 2009, University of Tokyo, Tokyo, Japan. (http://wwwsoc.nii.ac.jp/snano/7thsnano/en/general.html)

16. M. N. Tripathi, U. V. Waghmare, T. N. Ramesh and P. Vishnu Kamath, Ab-initio Study of the Polytypes of β-phase Nickel-hydroxide, The Third General Meeting of ACCMS-VO (Asian Consortium on Computational Materials Science - Virtual Organization), February 16 - 18, 2009,Institute for Materials Research, Tohoku University, Sendai, and Matsusima, Japan. (http://www-lab.imr.edu/~vo2009/index.html)

National

1. M. N. Tripathi and C. M. Bhandari, 74th Annual Session, The National Academy of Sciences, Dec. 2 to 4, 2004, Jaipur, India.

2. M. N. Tripathi and C. M. Bhandari, 49th DAE-Solid State Symposium, Dec 24-30, 2004, Guru Nanak University, Amritsar, Punjab, India.

3. M. N. Tripathi and C. M. Bhandari, Phonon Thermal Transport in free-standing Si-Ge quantum well structures, National Conference on Scientific and Legal challenges of Global warming, February 10-11, 2008, B N College, Kanpur, India.

4. M. N. Tripathi and C. M. Bhandari, National Conference on Scientific Applications of mathematics (NACSAM), December 23-24, 2007, V.S. Mehta College of Science, Kaushambi, India.

Participation in Course/Symposia/ Schools/Training: (International/National)

Details of Courses/trainings	**Institution & Place**	**Period of Courses attended**	**Total duration of the courses in weeks & days**
Science Journalism	NCSTC (DST), Vigyan Parishad, Allahabad.	Oct-Dec, 2000	(Three months) 90 days
Orientation Course	UGC-ASC, University of Allahabad	Aug 18 to Sept. 13, 2003	(Four weeks) 27 days
SERC School on "Strongly Correlated Electron System"	HRI, Allahabad	Nov. 15-27, 2004	(Two weeks) 14 days
Refresher course	UGC-ASC, Banaras Hindu University	March 8 to 28, 2006	(Three weeks) 21 days
Indo-Polish Workshop on "Liquid Crystals"	Physics Department, University of Allahabad	12 December, 2007	One day
Summer Research Fellowship (IASc-INSA-NASI)	Jawaharlal Nehru Centre for Advanced Scientific Research (JNCASR), Bangalore	May 11- July 05, 2008	(Eight weeks) 56 days
Visiting Scientist	CCMS, JNCASR, Bangalore	September 29-October 12, 2008	(Two weeks) 14 days

Short-course	Hanoi University of Technology, Hanoi, Vietnam	September 7-8, 2009	Two days
Spring College on Computational nanoscience	International centre for Theoretical Physics (ICTP), Trieste, Italy.	May 17-28, 2010	(Two weeks) 14 days
Visitor	Institute for Materials Research, Tohoku University, Sendai, Japan	December 24, 2011-January 14, 2012	Three weeks
TUE-CMS Visiting Scientist	CCMS, JNCASR, Bangalore	June 29-July 13, 2012	(Two weeks) 14 days

PERSONAL DETAILS

Name: Dr. MADHVENDRA NATH TRIPATHI
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Nationality: Indian
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Educational qualifications

· High School, U.P. Board with First division (74.20%marks)
· Intermediate, U.P. Board with First division (72.60% marks)
· B.Sc., University of Allahabad with First division (71.00 %marks)
· M.Sc. (Physics), University of Allahabad with First division (76.00% marks), 2nd in Univ.
· Qualified JRF (NET) CSIR Examination
· D.Phil., University of Allahabad, "Thermal and Thermoelectric Properties of Semiconductors"