

CURRICULUM VITAE

Name: Sudhakar Pandey

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Education:

i) 2009: Ph.D. (Theoretical Condensed Matter Physics) from the Indian Institute of Technology Kanpur, India

- **Thesis title:** *Investigation of correlated electron spin dynamics in metallic ferromagnets using a Goldstone-mode-preserving approach with self-energy and vertex corrections*

ii) 1999: M.Sc. (Physics) from the Banaras Hindu University, India

Employments:

i) 2014 – 2017: Worked as a *Postdoctoral Researcher* at the Institute for Theoretical Solid State Physics (ITF), Leibniz Institute for Solid State and Materials Research (IFW) Dresden, Germany

ii) 2012 – 2014: Worked as a *Postdoctoral Research Scholar* at the Department of Physics and Astronomy; University of Iowa, USA

iii) 2011 – 2012: Worked as a *Researcher* at the Asia Pacific Center for Theoretical Physics (APCTP), POSTECH, Republic of Korea

iv) 2009 – 2011: Worked as a *JSPS Postdoctoral Fellow* at the Department of Physics, Nagoya University, Japan

Teaching Experiences:

Worked as Tutor, Lab Instructor, and Teaching Assistant for a variety of physics courses during my Ph.D thesis work

Awards/Fellowships:

A) National:

i) Qualified for *Graduate Aptitude Test in Engineering (GATE)*, conducted by Ministry of Human Resource and Development (MHRD), India

ii) Qualified for *Junior Research Fellowship (JRF) and Lectureship (LS)*, conducted jointly by the Council of Scientific and Industrial Research (CSIR) and University Grant Commission (UGC), India

iii) Received the *Senior Research Fellowship (SRF)* from the Council of Scientific and Industrial Research (CSIR)

B) International:

Selected for the *JSPS Postdoctoral Fellowship*, awarded by the Japan Society For The Promotion of Science (JSPS), Japan

Participation in Conferences/Workshops/Schools/Meetings:

- i) "TOP-SPIN 3: Spin and Topological Phenomena in Nanostructures" held in Dresden, GERMANY during April 25-28, 2017
- ii) "2017 Spring Meeting of the German Physical Society (DPG)" held in Dresden, GERMANY during March 19-24, 2017
- iii) "TOP-SPIN 2: Spin and Topological Phenomena in Nanostructures" held in Groningen, NETHERLANDS during May 26-27, 2016
- iv) "2016 Spring Meeting of the German Physical Society (DPG)" held in Regensburg, GERMANY during March 06-12, 2016
- v) "TOP-SPIN: Spin and Topological Phenomena in Nanostructures" held in Salerno, ITALY during May 14-15, 2015
- vi) "*The 4th Indo-Japan Seminar on Electronic Structure of Novel Magnetic and Superconducting Materials*" held in Tokyo, JAPAN during February 1-2, 2011
- vii) "*Current Trends In Condensed Matter Physics*" held in Bhubaneswar, INDIA during Dec 15-19, 2010
- viii) "*2010 Autumn Meeting of the Physical Society of Japan*" held in Osaka, JAPAN during Sept 23-26, 2010
- ix) "*2010 Annual March Meeting of the American Physical Society*" held in Portland, USA during March 15-19, 2010
- x) "*2009 Autumn Meeting of the Physical Society of Japan*" held in Kumamoto, JAPAN during Sept 25-28, 2009
- xi) 40th IFF Spring School 2009 entitled "*Spintronics – From GMR to Quantum Information*" held in Jülich, GERMANY during March 9-20, 2009

Projects:

- i) Title: Curved Nanomembranes for Topological Quantum Computation (CNTQC)
Period: October, 2014 – May, 2017
Personal status: Postdoctoral Researcher
Funding agency: European Commission
(For details, see the link, <http://www.nano2qc.eu/>)
- ii) Title: Theoretical Study of Strongly Correlated Electron System with Emphasis on Spin Degree of Freedom
Period: July, 2009- July, 2011
Personal status: Co-investigator
Funding agency: Japan Society for the Promotion of Science (JSPS)

Memberships:

- i) American Physical Society
- ii) Physical Society of Japan

Areas of Research Interest:

Topological phases of matter, Unconventional superconductivity, Iron-based superconductors, Magnetism, Correlated electron systems, Many body physics

Publications:

- i) S. Pandey *et al.*, *Proximity-induced topological superconductivity in a Rashba spin-orbit coupled curved nanowire* (To be submitted)
- ii) S. Pandey, N. Scopigno, P. Gentile, M. Cuoco, and C. Ortix, *Topological quantum pump in serpentine-shaped semiconducting narrow channels*, *Physical Review B* **97**, 241103(R) (2018).
- iii) S. Pandey and C. Ortix, *Topological end states due to inhomogeneous strains in wrinkled semiconducting ribbons*, *Physical Review B* **93**, 195420 (2016).
- iv) S. Pandey, A. V. Chubukov, and M. Khodas, *Spin resonance in AFe_2Se_2 with s-wave pairing symmetry*, *Physical Review B* **88**, 224505 (2013).
- v) M. Nishishita, D. S. Hirashima, and S. Pandey, *Self-consistent Second-order Perturbation Theory of Correlation Effect in bcc Iron at Finite temperatures*, *Journal of the Physical Society of Japan* **82**, 114705 (2013).
- vi) M. Nishishita, D. S. Hirashima, and S. Pandey, *Correlation Effect in bcc Iron at Finite temperatures*, *Journal of the Korean Physical Society* **62**, 2160 (2013).
- vii) S. Pandey, H. Kontani, D. S. Hirashima, R. Arita, and H. Aoki, *Spin Hall effect in iron-based superconductors: A Dirac point effect*, *Physical Review B* **86**, 060507 (R) (2012).
- viii) S. Pandey and A. Singh, *Spin-charge coupling in a band ferromagnet: Magnon-energy reduction, anomalous softening, and damping*, *Physical Review B*, **78**, 014414 (2008).
- ix) S. Pandey, S. Das, B. Kamble, S. Ghosh, D. Singh, R. Ray, and A. Singh, *Fermionic representation for the ferromagnetic Kondo lattice model: Diagrammatic study of spin-charge coupling on magnon excitations*, *Physical Review B*, **77**, 134447 (2008).
- x) S. Pandey and A. Singh, *Quantum and thermal fluctuations in a two-dimensional correlated band ferromagnet: Goldstone-mode-preserving investigation with self-energy and vertex corrections*, *Physical Review B*, **76**, 104437 (2007).
- xi) S. Pandey and A. Singh, *Ferromagnetism in the t - t' Hubbard model: Interplay of lattice, band dispersion, and interaction effects studied within a Goldstone-mode preserving scheme*, *Physical Review B*, **75**, 064412 (2007).
- xii) S. Pandey and A. Singh, *Carrier-induced ferromagnetism in a diluted Hubbard model*, [arXiv:cond-mat/0502085](https://arxiv.org/abs/cond-mat/0502085) (unpublished)