Curriculum Vitae

Rohit S. Nair

Date & Place of Birth: 19/09/1991, Kerala, India
Nationality: Indian
Residence: Nijmegen, The Netherlands
mail: rohitsnair91@gmail.com
Phone: 0031-6-87741800
ORCID ID: 0000-0001-6743-2674

Research Interests

Quantum transport in solids, spin phenomena, magnetism, interface physics

Education

2016 - 2021 **University of Twente**, The Netherlands
PhD in Physics, *cum laude*
Advisor: Prof.P.J.Kelly
Thesis: *Spin-orbit-coupling induced lateral spin transport from first principles*

2013 - 2016 **Indian Institute of Technology Madras**, India
M.S (by research) in Thermal Sciences
Advisor: Prof.C.Balaji
Thesis: *Synergistic analysis of heat transfer characteristics of an internally finned heat pipe*

2009 - 2013 **University of Kerala**, India
B.Tech in Mechanical Engineering, *Distinction*

Experience

2021-present **ASML**, The Netherlands
Metrology design engineer

- Responsibilities include designing, developing and testing metrology solutions for Deep UltraViolet (DUV) photolithography machines in a multidisciplinary team
- Analysis of simulated and measured data to optimize and resolve metrology related performance issues of DUV machines

2016-2021 **The Dutch Research Council (NWO-I)**, The Netherlands
Researcher in the Computational Sciences for Energy Research (CSER) program

- Responsibilities included performing research in the Computational Material Science group at the University of Twente for a PhD

Academic roles

2017-2019 Teaching assistant, *Theoretical Solid State Physics*, 1st year of M.Sc. in Applied Physics lectured by Prof. P. J. Kelly

2019 Daily supervisor, 1 undergraduate student in Applied Physics

2019 Organizer, Nano Materials and Thin Films cluster, University of Twente

2015 Teaching assistant, *Thermodynamics*, 1st year of B.Tech in Mechanical engineering lectured by Prof. Babu Viswanathan

Selected Grants and Honors

2016 **Computational Sciences for Energy Research, CSER**
Join research program by Shell and NWO-I, selected to the final pool of 15 out of 2000+ applicants

2013 **Junior research fellowship, JRF**
Awarded by Council for Scientific and Industrial Research (CSIR), India

2009 **Scholarship for undergraduate studies**
Granted by the Ministry of Human Resources Development, India

2009 **Proficiency prize**
Awarded for graduating from high school (class 12^{th}) with the highest grade in the batch for the final exams conducted by the Central Board of Secondary Education in India

Presentations and Workshops

2019 **Gordon Research Conferences and Seminars**, Les Diablerets, Switzerland

2017-2019 **Physics at Veldhoven**, Veldhoven, The Netherlands

2019 **Physics with Industry, Lorentz centre**, Leiden, The Netherlands

2018 **Spintronics and Nanomagnetism in the Netherlands**, Nijmegen, The Netherlands

2018 **Joint European Magnetic Symposia Conference**, Mainz, Germany

2017 **Ab-initio Spin-Orbitronics**, Pescara, Italy

2015 **ASME-ATI-UIT conference on Thermal Energy Systems**, Naples, Italy

Publications

[1] R. S. Nair, E. Barati, K. Gupta, Z. Yuan, and P. J. Kelly, "Spin-Flip Diffusion Length in $5d$ Transition Metal Elements: a First-Principles Benchmark," *Phys. Rev. Lett.*, vol. 126, p. 196601, 2021.

[2] R. S. Nair and P. J. Kelly, "Fully resolved currents from quantum transport calculations," *Phys. Rev. B*, vol. 103, p. 195406, 2021. (Editor's Suggestion).

[3] R. S. Nair, M. Rang, and P. J. Kelly, "Spin Hall effect in a thin film Pt," *Phys. Rev. Lett*, 2021. (submitted, in review).

[4] R. S. Nair, K. Gupta, Z. Yuan, and P. J. Kelly, "Transverse spin currents in bulk Fe-Ni systems," 2021. (in preparation, based on chapter 3 of my thesis, to be submitted to Phys. Rev. B).

[5] R. S. Nair and P. J. Kelly, "Transverse spin injection in bilayers," 2021. (in preparation, based on chapter 6 of my thesis, to be submitted to Phys. Rev. Lett).

[6] R. S. Nair, E. Barati, K. Gupta, Z. Yuan, and P. J. Kelly, "Spin transport properties of $5d$ transition metal elements: a detailed study from first principles," 2021. (in preparation, based on chapter 2 of my thesis, to be submitted to Phys. Rev. B).

[7] R. S. Nair and C. Balaji, "Synergistic analysis of heat transfer characteristics of an internally finned two phase closed thermosyphon," *Applied Thermal Engineering*, vol. 101, pp. 720–729, 2016.

[8] R. Srikanth, R. S. Nair, and C. Balaji, "Thermosyphon assisted melting of PCM inside a rectangular enclosure:a synergistic numerical approach," *Journal of Physics: Conference Series*, vol. 745, p. 032130, Sep 2016.