

Tej Nath Lamichhane

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Education

2013– 2019	Iowa State University, Department of Physics and Astronomy, Ames, IA Ph.D. in Condensed Matter Physics
2010–2013	University of Texas at Arlington, Department of Physics, Arlington, TX Master's in Physics
2004–2006	Tribhuvan University, Kathmandu, Nepal. Master's in Physics
2001–2004	Tribhuvan University, Prithvi Narayan Campus, Pokhara, Nepal. Bachelor's in Physics

Employment

Postdoctoral research associate at Oak Ridge National Laboratory in Additive manufacturing of bonded permanent magnets and electrical machines (October 2019 - present)

Graduate Research Assistant, Department of Physics and Astronomy, Iowa State University and Ames Laboratory (June 2014 - June 2019)

Research Title

Synthesis and characterization of critical rare-earth poor/free magnetic materials

Skills

Additive manufacturing and characterization of permanent magnets

Single and polycrystalline intermetallic sample synthesis; characterization; magnetic, thermodynamical and transport properties measurements; and draft preparation for high quality journal papers

Characterization Instruments/Software

1. MPMS/PPMS
2. XRD/SEM
3. ICP
4. Autocad/3D printing
5. GSAS
6. Fullprof
7. OrientExpress (Crystallographic Orientation)
8. CLIP(Cologne Laue Indexation Program)
9. Crystal-Pearson data and Diamond 3
10. Vista

Research/Teaching Experience

1. Research Assistant: Department of Physics and Astronomy; Iowa State University (June 2014-June 2019)
2. Teaching Assistant: Department of Physics and Astronomy; Iowa State University (August 2013-May 2015)
Taught recitation sections of introductory classical mechanics (Phys. 221) for 2 semesters to undergraduate students and assisted in laboratory electricity and optics lab (Phys. 222) for 4 semesters.
3. Teaching Assistant: Department of Physics; University of Texas at Arlington (August 2010-May 2013) Taught undergraduate electromagnetism and optics laboratory
4. Physics Lecturer: Department of Physics; St. Xavier's College; Kathmandu Nepal (August 2008-May 2010)
5. Physics Lecturer: Department of Physics; Merryland Higher Secondary School; Kathmandu Nepal (August 2007-August 2008)

Awards

1. FY2019/CY2018 Inventor Incentive Award, Ames Laboratory, 311 Iowa State University, Ames, IA 50011

2. Outstanding Physics Major: Department of Physics; University of Texas at Arlington
3. Shreepati Koirala Gunthi medal: For securing highest GPA for the class of 2004 in Prithvi Narayan Campus; Pokhara Nepal

Provisional Patents

1. Permanent magnet alloy for gap magnets: Andriy Palasyuk, Tej N. Lamichhane, Olena Palasyuk, Vladimir Antropov, Paul C. Canfield, and Ralph W. McCallum; Conformation No. 8027

Basic Programming Skills

1. Mathematica
2. Python
3. Labview
4. OriginLab
5. Latex

Volunteer and Leadership Services

1. Event Coordinator: Nepalese Student Association; Iowa State University; 2014-2015
2. President: Nepalese Student Association; Iowa State University; 2016-2017

Conference Talks/Posters

1. March Meeting, American Physical Society: "Search for alternative or reduced rare-earth content ferro-magnetic materials for permanent magnet applications." (Purposed: March 2 - 6, 2020; Denver, Colorado) (Presented at Oak Ridge National Lab, CNMS)
2. 5th Annual CMI Conference for Postdoctoral and Student Researchers: "Additive manufacturing of isotropic PPS bonded NdFeB permanent magnet". (February 12-14, 2020 Colorado School of Mines Golden, Colorado)
3. Magnetism and magnetic materials conference: "Magnetic properties of Mg-assisted flux grown single crystalline Sm₂Co₁₇" (January 14-18, 2019, Washington DC)
4. 3rd Annual CMI Conference for Postdoctoral and Student Researchers: "Ce_{3-x}Mg_xCo₉: transformation of a Pauli paramagnet into a strong permanent magnet". (January 22-23, 2018 Colorado School of Mines Golden, Colorado)
5. Magnetism and magnetic materials conference: "Mg-doped CeCo₃: transformation of a Pauli paramagnet into a strong permanent magnet " (November 6-10, 2017 Pittsburgh, PA)
6. The 28th rare earth research conference poster: "Solution Growth of New Rare-earth Poor Ce/Co/Mg Permanent Magnets." (Monday, June 19, 2017 Iowa State University, Ames, IA)
7. March Meeting, American Physical Society: "Search for alternative or reduced rare-earth content ferromagnetic materials for permanent magnet applications." (March 13-17, 2017; New Orleans, Louisiana)
8. 1st Annual CMI Conference for Postdoctoral and Student Researchers: A study of magnetic property of HfMnP and ZrMnP". (February 3-4, 2016 Colorado School of Mines Golden, Colorado)

Publications

Lead author(11 published), 4 under draft preparation. Several projects are on progress as a contributing author.(150 citations, h-index: 8, i10-index: 8)

<https://scholar.google.com/citations?user=fBluC34AAAAJ&hl=en>

References

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- [2] T. N. Lamichhane, L. Sethuraman, A. Dalagan, H. Wang, J. Keller, and M. P. Paranthaman, "Additive manufacturing of soft magnets for electrical machines—a review," *Materials Today Physics*, p. 100255, 2020. [Online]. Available: <http://www.sciencedirect.com/science/article/pii/S2542529320300791>
- [3] M. P. Paranthaman, V. Yildirim, T. N. Lamichhane, B. A. Begley, B. K. Post, A. A.

- Hassen, B. C. Sales, K. Gandha, and I. C. Nlebedim, *Materials*, 2020. [Online]. Available: <https://www.mdpi.com/1996-1944/13/15/3319>
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