

KESHAV SHRESTHA, Ph.D.

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PROFESSIONAL CREDENTIALS

Ph. D. Physics	University of Houston, Houston, Texas, USA	Nov. 2015
PgDip Physics	The Abdus Salam ICTP, Trieste, Italy	Aug. 2010
M.S. Physics	Central Department of Physics, Tribhuvan University, Nepal	Apr. 2009
B.S. Physics & Chemistry	Mahendra Morang Campus, Tribhuvan University, Nepal	Jul. 2006

PROFESSIONAL EXPERIENCE

- Assistance Professor of Physics, West Texas A&M University, Canyon, TX Jan 2020 - Present
- Postdoctoral Researcher, National High Field Lab, Tallahassee, FL Feb 2018 – Jan 2020
- Postdoctoral Researcher, Idaho National Laboratory, Idaho Falls, ID Nov 2015 – Feb 2018
- Research Assistant, Texas Center for Superconductivity, Houston, TX Aug 2011 – Nov 2015
- Teaching Assistant, University of Houston, Houston, TX Aug 2010 – Aug 2011
- Lecturer, Patan Multiple Campus, Tribhuvan University, Nepal Dec 2008 – Aug 2009

RESEARCH FOCUS AREAS, SUMMARY

- Heavy Fermion and iron-based Superconductors
- Actinide Materials under Extreme Conditions
- Topological, Weyl, and Dirac Materials

MAJOR AWARDS AND FELLOWSHIPS

- C.W. Chu Scholarship, May 2015, University of Houston, Houston, TX
- ICTP Fellowship, Aug 2009-Aug 2010, Condensed Matter Physics Program, Trieste, Italy
- Dr. Kedarnath Khanal best student award, July 2009, Nepal Physical Society, Nepal

PEER-REVIEWED, ORIGINAL RESEARCH CONTRIBUTIONS

1. **K. Shrestha**, S. Zhang, L. H. Greene, J. D. Thompson, Y. Lai, R. E. Baumbach, K. Sasmal, M. B. Maple and W. K. Park "Evidence for Odd Frequency Pairing in the Heavy-fermion Superconductor CeCoIn₅" (Under Preparation)
2. **K. Shrestha**, L. Deng, B. Lv, and C. W. Chu "Pressure-induced Superconductivity in Eu_xCa_{1-x}Fe₂As₂" (Under Preparation)
3. **K. Shrestha**, T. Yao, J. Lian, D. Antonio, M. Tonks, and K. Gofryk "The grain-size effect on thermal conductivity of uranium dioxide", *Journal of Applied Physics* **129**, 125116 (2019).
4. **K. Shrestha**, M. Gooch, B. Lorenz and C. W. Chu "Experimental Setup of Ac Thermoelectric Power Measurements in a Cryocooler PPMS System and Its Implementation to Superconductors, Topological Insulator, and Thermoelectric Materials," *Instruments and Experimental Techniques*, **62**, 298 (2019).
5. **K. Shrestha**, D. Antonio, J-C Griveau, K. Prokeš, P. Gaczyński, E. Colineau, R. Caciuffo, and K. Gofryk "On the magnetic and electronic properties of NpPdSn," *Physical Review Materials* **2**, 074401 (2018).
6. D. Antonio, **K. Shrestha**, Y. Zhang, J. M. Harp, J. Carmeck, and K. Gofryk "Thermal and Transport Properties of U₃Si₂" *Journal of Nuclear Materials*, **508**, 154 (2018).

7. **K. Shrestha** and K. Gofryk “Combination of thermal and electric properties measurement techniques in a single setup suitable for radioactive materials in controlled environments and based on the 3 ω approach,” *Review of Scientific Instruments* **89**, 043905 (2018)
8. **K. Shrestha**, V. Marinova, B. Lorenz and C. W. Chu, “Evidence of a 2D Fermi surface due to surface states in a p-type metallic Bi₂Te₃”, *Journal of Physics: Conden. Matter* **30** 185601 (2018)
9. **K. Shrestha**, D. Graf, V. Marinova, B. Lorenz, C. W. Chu “Weak antilocalization effect due to topological surface states in Bi₂Se_{2.1}Te_{0.9}”, *Journal of Applied Physics* **122**, 145901 (2017).
10. **K. Shrestha**, V. Marinova, D. Graf, B. Lorenz and C. W. Chu, “Large magnetoresistance and Fermi surface study of Sb₂Se₂Te single crystal”, *Journal of Applied Physics* **122**, 125901 (2017).
11. **K. Shrestha**, D. Antonio, M. Jaime, N. Harrison, D. S. Mast, D. Safarik, T. Durakiewicz, J. –C. Griveau, and K. Gofryk “Tricritical point from high-field magnetoelastic and metamagnetic effects in UN,” *Nature Scientific Reports* **7**, 6642 (2017). [Highlighted at INL website: <https://www.inl.gov/article/uranium-nitride-fuel-research/>]
12. **K. Shrestha**, M. Chou, D. Graf, H. D. Yang, B. Lorenz and C. W. Chu “Extremely large magnetoresistance and ultra-high mobility due to topological surface states in metallic Bi₂Te₃,” *Physical Review B* **95**, 195113 (2017).
13. **K. Shrestha**, D. E. Graf, V. Marinova, B. Lorenz, and C. W. Chu, “Simultaneous detection of quantum oscillations from bulk and topological surface states in metallic Bi₂Se_{2.1}Te_{0.9}” *Philosophical Magazine* **97**, 1740 (2017).
14. **K. Shrestha**, D. Graf, V. Marinova, B. Lorenz, C. W. Chu “Quantum Oscillations in metallic Sb₂Te₂Se topological insulator,” *Physical Review B* **95**, 075102 (2017).
15. **K. Shrestha**, V. Marinova, B. Lorenz and C. W. Chu “Shubnikov de Haas Oscillations from topological surface states of metallic Bi₂Se_{2.1}Te_{0.9},” *Physical Review B* **90**, 241111 (R), (2014).
16. C. W. Chu, B. Lv, L Z Deng, B. Lorenz, B. Jawdat, **K. Shrestha**, K. Zhao, X. Y. Zhu, Y. Y. Xue, and F. Y. Wei. “The Rise of T_c: A Promising Paradigm via Interfacial Mechanism,” *J. Phys.:Conf. Ser.* **449**, 012014, (2013).

SCIENTIFIC TALKS/POSTER PRESENTATIONS

1. “Field-induced Pseudogap in the Heavy-fermion Superconductor CeCoIn₅”, APS March Meeting, Talk, March 2019, Boston, MD.
2. “Low Temperature (H,T) Phase Diagrams of UN and UO₂ from their thermodynamic properties in extreme magnetic fields”, The Calorimetry Conference (CALCON), Talk, August 2018, Lake Tahoe, CA. ([Invited Talk](#))
3. “Effect of grain boundary scattering on the thermal conductivity of uranium dioxide”, APS March Meeting, Talk, March, 2018, Los Angeles, CA.
4. “The thermal conductivity of actinide materials: a new experimental approach using 3 ω method”, The 33rd ITCC INTERNATIONAL THERMAL CONDUCTIVITY CONFERENCE (ITCC) and The 21ST INTERNATIONAL THERMAL EXPANSION SYMPOSIUM (ITES), May, 2017, Utah State University, Logan, UT. ([Invited Talk](#))
5. “The Thermal Conductivity of Actinide Materials—A New Experimental Approach”, MRS Spring Meeting, Poster, April 2017, Phoenix, AZ.
6. “Thermal conductivity of actinide materials measured using the 3 ω method”, APS March Meeting, Talk, March 2017, New Orleans, LA.
7. “Quantum oscillations in metallic Sb₂Te₂Se topological insulator”, APS March Meeting Poster Presentation, March 2017, New Orleans, LA.
8. “Strong magnetoelastic coupling and magnetic phase diagram of UN”, Idaho National Laboratory Brown Bag Postdoc Series Talk, June 2016, Idaho Falls, Idaho. ([Invited Talk](#))

9. "Kondo behavior in antiferromagnet NpPdSn", APS March Meeting Talk, March 2016, Baltimore, MD.
10. "Weak Anti-localization effect from topological surface states of metallic Bi₂Te₃ single crystals", APS March Meeting Poster, March 2016, Baltimore, MD.
11. "Shubnikov-de Haas Oscillations from topological surface states of metallic Bi₂Se_{2.1}Te_{0.9}" APS March Meeting, Talk, March 2015, San Antonio, TX.
12. "Competition between superconductivity, SDW, and magnetism in Eu_xCa_{1-x}Fe₂As₂ in ambient and under pressure", APS March Meeting, Talk, March 2013, Baltimore, MD.
13. "First principles study of the stability of solid fluorine", Poster Presentation in International Conference on Frontier of Physics (ICFP), June 2009, Kathmandu, Nepal.

THESIS/DISSERTATION

1. "Magnetotransport studies on topological insulators" Ph.D. dissertation, Texas Center for Superconductivity at University of Houston, November 2015.
Advisor: Dr. Paul C. W. Chu
2. "Atomistic simulation of titanium dioxide (TiO₂) nanotubes" Postgraduate Diploma dissertation, The Abdus Salam International Center for Theoretical Physics (ICTP), October 2010.
Advisors: Dr. Sandro Scandolo and Dr. Nicola Seriani
3. "First principles studies of the stability of solid fluorine" M. Sc. thesis, Central Department of Physics, Tribhuvan University, Kirtipur, April 2009.
Advisors: Dr. Devendra R. Mishra and Dr. Mukunda M. Aryal

PROFESSIONAL SOCIETIES

- American Physical Society (APS)
- Nepalese Physical Society (NPS)
- Society of Physics Students (SPS)