a. Professional Preparation:

Sharif University of Technology	Physics	Bachelor of Science	1998
Washington University in St Louis	Physics	PhD	2004
Harvard University	Physics	Postdoctoral fellow	2004-9

Undergraduate advisor, Mohammad Akhavan, Sharif University, Department of Physics
Graduate advisor, James S. Schilling, Washington University in St. Louis, Physics Department
Postdoctoral advisor, Isaac F. Silvera, Harvard University, Physics Department

b. Appointments:

Associate Professor of Physics	2015-Present
Assistant Professor of Physics, University of Utah	2010-15
Research Fellow, Harvard University, Department of Physics	2007-9
Postdoctoral Fellow, Harvard University, Department of Physics	2004-7

c. Publications:

1. *"Pressure-Induced Superconductivity in the Wide Band Gap Semiconductor Cu2Br2Se6 with A Robust Framework"*Cai W, Lin W, Yan Y, Hilleke KP, Coles J, Bao J-K, Xu J, Zhang D, Chung DY, Kanatzidis MG*, Zurek E*, Deemyad S*. **Chemistry of Materials**. (2020) ;32(14):6237-46. (doi: 10.1021/acs.chemmater.0c02151)
2. *"Fermi surface studies of the low-temperature structure of sodium"* S. F. Elatresh, Mohammad Tomal Hossain, Tushar Bhowmick, A. D. Grockowiak, Weizhao Cai, W. A. Coniglio, Stanley W. Tozer, N. W. Ashcroft, S. A. Bonev*, Shanti Deemyad*, and Roald Hoffmann*. Phys. Rev.B (2020) B. 2020;101(22):220103.
3. *"Parallel background subtraction in diamond anvil cells for high pressure X-ray data analysis"* Weizhao Cai, Mohammad Tomal Hossain, Jared Coles, Jordan Lybarger, Joseph Blanton, Eran Sterer and Shanti Deemyad, High Pressure Research, (2019) 1-12
4. *"Perovskites with a Twist: Strong In1+ Off-centering in the Mixed-Valent CsInX3 (X= Cl, Br)*". McCall KM, Friedrich D, Chica DG, Cai W, Stoumpos CC, Alexander GC, Deemyad S, Wessels BW, Kanatzidis MG. Chemistry of Materials. 2019.
5. *"Pressure-induced Superconductivity and Flattened Se6 Rings in the Wide Bandgap Semiconductor Cu2I2Se6."* Cai, W., Lin, W., Li, L.H., Malliakas, C. D., Zhang, R., Groesbeck, M., Bao, J. K., Zhang, D., Sterer, E., Kanatzidis, M. G., and S. Deemyad, Journal of the American Chemical Society, 2019. Just Accepted Manuscript.DOI: 10.1021/jacs.9b06794
6. *"Probing quantum effects in lithium."* Deemyad, S.*; Zhang, R., Physica C: Superconductivity and its Applications 2018., DOI: 10.1016/j.physc.2018.02.007
7. *"Effects of Non-Hydrostatic Stress on Structural and Optoelectronic Properties of Methylammonium Lead Bromide Perovskite."* Zhang, Rong; Cai, Weizhao; Bi, Tiange; Zarifi, Niloofar; Terpstra, Tyson; Zhang, Chuang; Vardeny, Zeev Valy; Zurek*, Eva; Deemyad, Shanti*, Journal of Physical Chemistry Letters, 2017, 2017. 8(15): p. 3457-3465.
8. *"Quantum and isotope effects in lithium metal"* Graeme J. Ackland, Mihindra Dunuwille, Miguel Martinez-Canales, Ingo Loa, Rong Zhang, Stanislav Sinogeikin, Weizhao Cai and Shanti Deemyad* *Research Article,* Science, 356(6344): p. 1254-1259 (2017). DOI: 10.1126/science.aal4886
9. *"The low temperature structure of lithium: evidence from Fermi surface analysis*" Sabri F. Elatresh, Weizhao Cai, N. W. Ashcroft, Roald Hoffmann*, Shanti Deemyad*, and Stanimir A. Bonev*, Proceedings of the National Academy of Sciences 114, 5389(2017)DOI: 10.1073/pnas.1701994114

10. *"Deuterium Isotope Effects in Polymerization of Benzene under Pressure."* Weizhao Cai, Mihindra Dunuwille, Jiangang He, Jasmine K. Bishop, Mary K. MacLean, Jamie J. Molaison, Antonio M. dos Santos, Stanislav Sinogeikin, and Shanti Deemyad*, Journal of Physical Chemistry Letters, 2017, DOI: 10.1021/acs.jpclett.7b00536
11. *"Piezochromism, Structural and Electronic Properties of Benz[a]anthracene under Pressure"* Weizhao Cai, Rong Zhang, Yansun Yao,*and Shanti Deemyad*, Physical Chemistry Chemical Physics, 2017, **19**, 6216 – 6223, DOI: 10.1039/C6CP08171A
12. *"Note: Simple and portable setup for loading high purity liquids in diamond anvil cell. "* Olejnik, E. and S. Deemyad, 2016. Rev. Sci. Instrum., 2016. **87**(3).
13. *"Boundaries for martensitic transition of 7Li under pressure"*. Schaeffer, A.M., W. Cai, E. Olejnik, J.J. Molaison, S. Sinogeikin, A.M. dos Santos, and S. Deemyad, Nature Communications, 2015. **6**
14. *"High-pressure superconducting phase diagram of 6Li: Isotope effects in dense lithium"*. Schaeffer, A.M., S.R. Temple, J.K. Bishop, and S. Deemyad, Proceedings of the National Academy of Sciences, 2015. **112**(1): p. 60-64 (Online 12-22-14.)
15. "*Twin sample chamber for simultaneous comparative transport measurements in a diamond anvil cell (DAC")*, Anne Marie J. Schaeffer and Shanti Deemyad Rev. Sci. Instrum. **84**, 095108 (2013)
16. *"Superconductivity In BaLi4 under pressure"* Schaeffer AM, Delong M, Anderson ZW, Talmadge WB, Gurusuwamy S, Deemyad S., Journal of Physics Condensed Matter, 25 (2013) 375701.
17. *"High Pressure Melting of Lithium"* Schaeffer AM, Talmadge, WB, Temple SR, Deemyad S., Physical Review Letters 109, 185702 (2012)
18. *"Strategy and enhanced temperature determination in a laser heated diamond anvil cell"* Deemyad S. and Silvera IF, Journal of Applied Physics **105**, 093543 (2009)
19. *"Melting line of hydrogen at high pressures"* Deemyad S. and Silvera IF, Physical Review Letters 100, 155701 (2008)
20. *"Pulsed laser heating and temperature determination in a diamond anvil cell"* Deemyad S, Sterer E., Barthel C., Rekhi S., Tempere J. and Silvera IF. Rev. Sci. Instrum., 76, 125104 (2005)
21. *"The superconducting phase diagram of Li metal to 67 GPa"* [Cover Story of PRL] Deemyad S. and Schilling JS, Physical Review Letters 91, 167001 (2003).
22. *"Pathways to metallic hydrogen"* Silvera I. F. and Deemyad S., 7TH CONFERENCE ON CRYOCRYSTALS AND QUANTUM CRYSTALS, Wroclaw, Poland, (edited by M. Kazimierski) (2008)
23. *"Temperature dependence of the emissivity of Pt in the IR"* Deemyad S. and Silvera IF, Rev. Sci. Instrum., 79, 086105 (2008)
24. *"Studies on the weak itinerant ferromagnet SrRuO3 under high pressure to 34 GPa"* Hamlin JJ, Deemyad S, Schilling JS, Jacobsen MK, Kumar RS, Cornelius AL, Cao G and Neumeier JJ, Physical Review B 76, 014432 (2007)
25. *"High-pressure study of structural phase transitions and superconductivity in La1.48Nd0.4Sr0.12CuO4"* Crawford MK, Harlow RL, Deemyad S, Tissen V, Schilling JS, McMarron E, Tozer SW, Cox DE, Ichikawa N, Uchida S, and Huang Q. Physical Review B 71, 104513 (2005)
26. *"Enhanced superconducting properties of bicrystalline YBa2Cu3Ox and alkali metals under pressure"* Tomita T, Deemyad S , Hamlin JJ, Schilling JS, Tissen VG, Veal BW, Chen L and Claus H. Journal of Physics Condensed Matter 17, S921 (2005)
27. *"Dependence of the superconducting transition temperature of MgB2 on pressure to 20 GPa"* Deemyad S, Schilling JS, Jorgensen JD, Hinks DG. Physica C: Superconductivity. 2001;361(4):227-33.
28. *"Dependence of the superconducting transition temperature of single and polycrystalline MgB2 on hydrostatic pressure".* Deemyad S, Tomita T, Hamlin JJ, Beckett BR, Schilling JS, Hinks DG, et al. Physica

C: Superconductivity. 2003;385(1-2):105-16.

d. Awards and recognitions

1. Myriad Award of research excellence (Myriad Genetics Inc. and U. of U. College of Science 2014)
2. NSF faculty early career award (2013)
3. APS research scholarship award (APS Shock Compression of Condensed Matter Conference, Nashville, TN- 2009)
4. Certificate of teaching excellence (Harvard University BOK center-2007)
5. Dissertation Fellowship (Washington University in St. Louis-2004)
6. Jill Abrams Scholarship in Physics (Washington University in St. Louis-2003)

e. Synergistic activities

1. Co-director of Erice 2022 High Pressure Crystallography School (Erice, Italy 2022)
2. Chair; Crystallography using large volume presses and diamond anvil cells in IUCr 2020, 22-28 August 2020, Prauge, Czech republik
3. Elected Treasurer of the of International Association for the Advancement of High Pressure, AIRAPT (2019-p)
4. Elected as executive committee member of International Association for the Advancement of High Pressure, AIRAPT (2017)
5. Advisory committee of international conferences: LT29 (Aug 2019, Osaka, Japan), EHPRG (Sept. 2020, Spain), APS March meeting 2020
6. Invited Panelist on NSF Workshop on midscale instrumentation for quantum materials (Nov 2016)
7. Elected Chair of high Pressure GRC 2016.
8. Review panel of ANL, ORNL, NHMFL
9. Chair; Interactions in solids under stress microsymposia in IUCr 2017, 21-28 August 2017, Hyderabad, INDIA,
10. Co-organizing focused sessions in SMEC meeting 2013 (Structural and electronic phase transformations of materials under pressure that lead to unusual electronic, magnetic and optical properties with Dr. R. Hennig) and 2016 (Structure and electronic structures of ultra-light materials with Dr. E. Zurek)
11. Serving on several NSF and DOE proposal reviewing panels (2014 present)
12. Science and Technology (AIRAPT) 2016 organizing several activities in the physics department REU program Summer of 2011.
13. Organizing the physics program of the Science day at university of Utah as Physics representative of College of science (2010).
14. Science at breakfast for non-scientists, Science Day University of Utah,
15. Annual Talk, ACCESS program girls and Undergraduate seminar series (2010-12).
16. Elected speaker of Science Night Live, Organized by University of Utah College of Science (Feb 2014)

f. Invited talks (Excluding interview talks)

1. “Physics of Light Dense Matter: Quantum and Classical Effects” APS March meeting 2021 (Virtual presentation) March 2021
2. “Physics of Light Dense Matter: Quantum and Classical Effects in Lithium”, Virtual

Colloquium, Boston College, Oct 2020)

3. "Physics of Light Dense Matter: Quantum and Classical Effects in Lithium", Virtual Seminar, EPL, Carnegie Institute, Sept 2020)
4. "Physics of Light Dense Matter: Quantum and Classical Effects", Seminar, NREL, Colorado, Dec 2019
5. "Quantum effect in lithium under extreme conditions", Colloquium, Department of Physics, ISU, ID, December 2019
6. "Quantum effect in lithium under extreme conditions", Seminar, Department of Engineering, UCSD, CA, November 2019
7. "Quantum effects in light elements at extreme conditions", Plenary talk, APS 4-Corners, Arizona, Oct 2019
8. "Crystallography and Fermiology of lithium under pressure", MSM19, Seoul, Korea, Aug 2019
9. "Crystal and electronic structure of lithium under pressure", CNPEM, Campinas, Brazil, July 2019
10. "Quantum effects in materials under pressure", Colloquium, BYU, Provo, Feb 2019
11. "Lithium under pressure", Annual meeting, American Physical Society, Boston, MA, March 2019
12. "Electronic and crystal structures of dense lithium", Condensed matter seminar, Purdue University, Indianapolis, IN, October, 2018.
13. "Metastable, Unstable and ground state structure of lithium isotopes", Condensed Matter Seminar, BYU, Provo, UT, November 2018.
14. "Metastability in phase transitions of lithium", ACS meeting, Boston, MA, August, 2018.
15. "Structural transition in light alkali metals", IUCr High pressure workshop (Plenary talk) , Honolulu, HI, August 2018.
16. "Metastable, Unstable and ground state structure of lithium isotopes" HPSP18&WHS2, Barcelona, Spain., July 2018
17. "Present / Future: Innovative Approaches — Keynote Session: Recent Advances in High-Pressure Research." GRC, High Pressure, Biddeford, NH, June 2017
18. "Ground state and isotope effects in lithium metal", Advanced photon source, November 2017
19. "Lithium under pressure" APS 4CS, Fort Collins, CO, October 2017
20. "Unstable, Metastable and Ground state structures of lithium metal", Plenary talk, MSM-17 meeting, September 2017
21. "Lithium under pressure" AIRAPT meeting, Beijing, China, August 2017
22. "Many faces of the simplest metal "LITHIUM" under pressure, Physics Colloquium, Weber State U, October 2016
23. "Many faces of the simplest metal "LITHIUM" under pressure, Physics Colloquium, UC Davis, September 2016
24. "Many faces of the simplest metal "LITHIUM" under pressure, HPSP17 & WHS conference, Tokyo, Japan, August 2016
25. "Lithium under high pressure" Harvard University, Special seminar, July 2016.
26. "Structures of lithium isotopes" IUCR High pressure workshop" , Sao Paulo, Brazil, September 2015
27. "Lithium under high pressure" Emerging Frontiers in Experimental Condensed Matter Physics of Strongly Correlated Electron Systems , National Science Foundation, VA, May 2015
28. "Lithium under high pressure" Materials Science and Engineering graduate seminar , University of Utah, Feb 2015
29. "Science and technology at extreme conditions; Past, Present and Future" GRS, High pressure research at, closing talk, June 2014
30. "Isotope effects in superconductivity of lithium" ISU, Colloquium, April 2014
31. "Isotope effects in superconductivity of lithium" NCAS4, Sharif University of Technology, Feb 2014
32. "Methods for detection of high pressure melting of metals" CECAM workshop, University Pierre et Marie Curie, Paris, Dec. 2012

33. "High pressure melting of lithium" Condensed matter seminar series, Washington University in St. Louis, Nov. 2010.
34. " Non-Trivial Physics of Simple Elements at High Densities: En-Route to Metallic Hydrogen and Insulating Lithium" Physics Colloquium, Stanford University, April 2012
35. "Simple elements at extreme conditions" Condensed matter seminar series, UC Davis, Oct. 2010.
36. "Simple elements at extreme conditions" Condensed matter seminar series, University Pierre et Marie Curie, Paris, Nov. 2009
37. " Melting line of molecular hydrogen and pulsed laser heating in diamond anvil cell" APS Shock Compression of Condensed Matter 2009 Conference, Nashville, TN, June 2009
38. "Melting line of molecular hydrogen" SMEC Meeting , Miami, March 2009
39. "Melting line of molecular hydrogen" Gordon Research Conference in High Pressure, University of New England, June 2008.
40. "Melting line of hydrogen: En-route to metallic hydrogen" Condensed Matter Seminars, University of Dalhousie, Halifax April 2008
41. "Pulsed laser heating and temperature determination in diamond anvil cell" SMEC Meeting , Miami, March 2005
42. "Superconductivity in the alkali metals" Gordon Research Conference in High Pressure, Kimble Union College, June 2004

g. Departmental and university of Utah committees

1. Academic senate executive committee (2019-21)
2. Academic senate (2019-p)
3. Postdoctoral policy committee of academic senate (2020-21)
4. Condensed matter faculty search (Chair 2020-21)
5. Honors thesis advisor (2020-21)
6. Admission committee (2020-21)
7. Policy board (2013-14)
8. Postdoctoral affair committee (2013-present)
9. Admission committee (2010-12), (Chair 2011-12)
10. Condensed matter seminar (Chair 2012-13)
11. College of Science Council (2011 and 2013) (Organizing science Day at U Nov. 2011)
12. Diversity Committee (2013)
13. Awards Committee (2013)
14. CME search committee (2012)
15. College of Science INTELLECTUAL EXPLORATION– PHYSICAL, LIFE & APPLIEDSCIENCES (2014)
16. Museum of Fine Arts advisory committee (2012)
17. U. of U. Fine Arts Committee (2012-2014)

h. Course taught

a. Calculus based general physics part I and II (Mechanics and Electromagnetism and optics). b. algebra based physics part I, c. Modern Physics. d. Condensed matter physics part I for advanced undergraduates and graduate students, e. Graduate laboratory, f. Women in Physics