Curriculum Vitae

Daniel E.M. Hoff

Current Position

Research Associate . . . . . *University of Massachusetts, Lowell*

Education

2018:

Ph.D Nuclear Chemistry . . . . . *Washington University in St. Louis*

Advisor: Lee Sobotka
Thesis: *Spin Alignment in Inelastic Nuclear Reactions*

2013:

B.A. Physics with honors . . . . . *University of Chicago*

B.S. Mathematics . . . . . *University of Chicago*

Publications

2020:

Kennington, A.R.L et al. *Search for Nova Presolar Grains: γ-Ray Spectroscopy of* ^{34}Ar *and its Relevance for the Astrophysical* $^{33}Cl(p,\gamma)$ *Reaction* Physical Review Letters 124 (25), 252702.

Webb, T.B. et al *Invariant-Mass Spectrum of* ^{11}O Physical Review C 101 (4), 044317.

Hoff, D.E.M., Rogers, A.M., Wang, S.M. (王思敏) et al. *Mirror symmetry violation in bound nuclear ground states* Nature 580, 52–55 (2020)

2019:

Webb, T.B. et al. *Particle decays of levels in* ^{11,12}N *and* ^{12}O *investigated with the invariant-mass method* Physical Review C 100 (2), 024306.

Webb, T.B. et al. *First Observation of Unbound* ^{11}O*, the Mirror of the Halo Nucleus* ^{11}Li Physical Review Letters 122 (12), 122501.

2018:

Hoff, D.E.M, Potel, G. et al. *Large Longitudinal Spin Alignment Generated in Inelastic Nuclear Reactions* Physical Review C 97 (5), 054605.

Patch, S.K., Hoff, D.E.M., Webb, T.B., Sobotka, L.G., Zhao, T *Two-stage ionoacoustic range verification leveraging Monte Carlo and acoustic simulations to stably account for tissue inhomogeneity and accelerator–specific time structure- A simulation study* Medical Physics, 45: 783–793.

2017:

Hoff, D.E.M, Charity, R.J. et al. *Large Longitudinal Spin Alignment of Excited Projectiles in Intermediate Energy Inelastic Scattering* Physical Review Letters 119, 232501.

2015:

Hoff, D.E.M., Barnes, A.B. et al. *Frequency swept microwaves for hyperfine decoupling and time domain dynamic nuclear polarization* Solid State Nuclear Magnetic Resonance, Volume 72, 2015, 79-89.

Research Experience

2018-Present:

Research Associate . . . . . *University of Massachusetts, Lowell*

2014-2018:

Graduate Research Assistant . . . . . *Washington University in St. Louis*
Advisor: Dr. Lee Sobotka

2013-2014:

Staff Scientist . . . . . *Washington University in St. Louis*
Advisor: Dr. Alexander Barnes

2010-2012:

Research Assistant . . . . . *University of Chicago*
Advisor: Dr. Scott Wakely

2009:

Research Assistant . . . . . *Washington University in St. Louis*
Advisor: Dr. James Buckley

Teaching Experience

Spring 2020:

Instructor for Phys. 1410 Classical Mechanics . . . . . *University of Massachusetts, Lowell*
First Semester Physics Lecture
Section Size: 24 Undergraduates

Fall 2019:

Instructor for Phys. 1440 Electromagnetism . . . . . *University of Massachusetts, Lowell*
Second Semester Physics Lecture
Section Size: 10 undergraduates

Fall 2017:

Teaching Assistant for Chem. 460 Radiochemistry . . . . . *Washington University in St. Louis*
Upper Level Undergraduate/Graduate Student Lab.
Class Size: 3 Undergraduates

2014-2016:

Teaching Assistant for Chem 151/152 General Chemistry Lab . . . . . *Washington University in St. Louis*
Introductory Level Undergraduate Lab.
Class Size: 20 Undergraduates

Conferences and Talks

2020:

Invited Talk at Argonne National Laboratory (ANL) Heavy Ion Discussion
A Crack in Nuclear Mirror Symmetry

Invited Talk at Massachusetts Institute of Technology (MIT) Nuclear and Particle Physics Colloquium
A Crack in Nuclear Mirror Symmetry

2019:

Talk at DNP meeting of APS
Properties of proton-emitting ^{72,73}Rb *isotopes*

Poster at Nuclear Chemistry Gordon Conference
^{73}Sr β*-delayed proton emission and the structure of* ^{73}Rb

Talk at April Meeting of APS
A Radio-Frequency Fragment Separator (RFFS) for FRIB

2018:

Talk at April Meeting of APS
Large Longitudinal Spin Alignment Generated in Inelastic Nuclear Reactions

Poster at April Meeting of APS
ASICs for FRIB

Poster at SSAP Symposium
Producing Huge Spin Alignment of Inelastically Scattered Projectiles in Clustered Nuclei
Received Poster Award

2017:

Invited Talk at Los Alamos National Laboratory (LANL) Nuclear Data Seminar
Large Longitudinal Spin Alignment of Excited Projectiles in Intermediate Energy Inelastic Scattering

Poster/Talk at Nuclear Chemistry Gordon Conference
Producing Huge Spin Alignment of Inelastically Scattered Projectiles in Clustered Nuclei
Selected to Give Talk based on Poster Session Vote

2015:

Poster/Talk at Exotic Beam Summer School
Spin Alignment of Excited Projectiles
Selected to Give Talk based on Poster Session Vote

2014:

Poster at Rocky Mountain Conference on Magnetic Resonance
Frequency Agile Gyrotron for DNP and Electron Decoupling