

Vasile Ovidiu Garlea

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EDUCATION

- 2001 Ph.D. in Physics, Joseph-Fourier University, Grenoble, France
- 1998 M.S. in Physics, Joseph Fourier University, France & Babes-Bolyai University, Romania
- 1997 B.S. in Physics, Babes-Bolyai University Cluj-Napoca, Romania

EMPLOYMENT

2017 – present: Senior Neutron Scattering Scientist at HYSPEC- Hybrid Spectrometer at the SNS, Neutron Scattering Division, Oak Ridge National Laboratory (ORNL)

- Co-responsible for operation of HYSPEC spectrometer.
- Enhancing polarized neutrons capabilities at HYSPEC
- Serve as senior adviser for the VERDI instrument at the second target station.
- Supporting the development of data analysis workflows for modeling spin-wave excitations and magnetic structures determination.
- Developing and managing a spin-wave information database
- Leading several projects involving studies of static and dynamic properties of strongly correlated electron systems. Research topics currently pursued include:
 - exotic magnetic ground states such as incommensurate magnetic ordering and spin-liquids arising from competing interactions in geometrically frustrated magnets.
 - magnetic excitations in low dimensional quantum systems
 - magnetoelastic coupling and phase diagrams in functional materials.

2013 – 2017: Instrument Scientist at the HYSPEC- Hybrid Spectrometer at the SNS, Neutron Scattering Division, Oak Ridge National Laboratory (ORNL)

- Commissioning and supporting user program at HYSPEC spectrometer.
- Commissioning and implementation of the wide-angle supermirror analyzer for XYZ polarized neutrons studies
- Providing support in development of data reduction and analysis workflow for elastic and inelastic data and polarized neutron scattering
- Performing studies of static and dynamic properties of strongly correlated electron systems.

2007 – 2013: Lead Instrument Scientist at the HB2A Neutron Powder Diffractometer at High Flux Isotope Reactor (HFIR), Neutron Sciences Directorate, ORNL

- Overseeing the installation of the HB2A high-resolution powder diffractometer at the HFIR
- Responsible for instrument operation, and establishing and expanding the user community
- Demonstrating and promoting the half polarization method for weak ferromagnets
- Performing neutron scattering studies of novel magnetic materials

2005 – 2007: Postdoctoral Research Associate, HFIR Center for Neutron Scattering, ORNL

- Providing support for the operation of HB1 triple-axis-spectrometer at HFIR
- Elastic and inelastic neutron scattering studies of orbital-spin coupled systems and quasi-1D spin gapped systems
- Single crystal growths by floating zone and flux techniques

2003 –2005: Postdoctoral Research Associate, Neutron Scattering Group, Ames Laboratory & Iowa State University

- Co-responsible for operation of the HB1A triple-axis spectrometer at HFIR
- Studies of magnetic excitations in molecular magnets and martensitic alloys, and determining magnetic structures of magneto-caloric materials

2002– 2003: Postdoctoral Research Associate Synchrotron Light Laboratory, ELETTRA, Trieste, Italy

- Design and construction of a new powder diffraction beamline (MCX, Material Characterization by X-Ray Diffraction)
- Development and implementation of analytical software for the instrument control

1998 – 2002: PhD student, Laboratoire de Cristallographie, CNRS, Grenoble, France

- Synthesis of new delafossite derived oxides using solid state and exchange reactions, high pressure and sol-gel synthesis
- Neutron and x-ray diffraction experiments using ILL and ESRF facilities; Solving structures from powder diffraction data (ab-initio calculation, Fourier analysis)
- Resistivity and magnetization measurements; high magnetic field measurements (LCMI Grenoble)

1997 - 1998: Physicist, National Institute for Research and Development for Isotopic and Molecular Technology, Cluj Napoca, Romania

- Analysis of multi-component mixtures using mass spectrometry and chromatography
- Molecular structure determination

SYNERGISTIC ACTIVITIES

- Courtesy appointment with the Department of Chemistry and Biochemistry at Florida State University
- Serving as a Vice Chair in the Commission on Magnetic Structures of the International Union of Crystallography (IUCr). The commission goal is to establish standards for the description and dissemination of magnetic structures and their underlying symmetries.

- Senior adviser for the new neutron diffraction instrument VERDI (Versatile Diffractometer for complex magnetic structure), proposed for the Second Target Station at SNS
- Organizer and lecturer of the workshop series on Representational Analysis and Magnetic Structure Determination by Neutron Diffraction (hosted by ORNL & NCNR starting from 2009), and on Polarized Neutron Diffraction and Spectroscopy (2019-present) and Spin Waves modeling (2023-).
- Instructor at the National School on Neutron and X-ray Scattering: hands-on experiments at the HB2A and WAND diffractometers (2008-2012) and HYSPEC spectrometer (2013-present).
- Referee for professional journals: Physical Review Letters, Physical Review B, Nature, Scientific Reports, Journal of Applied Crystallography, J. of Magnetism and Magnetic Materials, J. Alloys and Compounds
- Member of the Neutron Scattering Society of America (NSSA), American Physical Society (APS), Materials Research Society (2008-2020), American Chemical Society (2018-2020), American Crystallographic Association (2008- 2014).
- Mentored Dr. Peter Jiang for his successful DOE Early career research proposal entitled “Realization of Full Neutron Polarization Control: Next Generation Spherical Neutron Polarimetry for Neutron Scattering,”
- Mentoring a number of undergraduates, graduate students and postdoctoral fellows from different universities: Ian Campbell (PhD candidate at FSU, 2022-) , Judy Clark FSU (2020/21) - thesis-co-adviser and SCGSR -DOE program, Liam Ritchie - Georgia Tech. (2020), Duminda Sanjeewa – Clemson Univ and MSTD-ORNL (2017-2020), Alexandra Mannig - ETZ Zurich - thesis defense committee (2017), Xiaoyan Tan, thesis-co-adviser - FSU (2016) Biao Hu - LSU (2010), Corey Thompson- FSU (2011, 2012); Dr. Keeseong Park - UV (2010); Ashley Coke, UT (2009, 2010) - TN Govn’s Academy for Math and Science; Aaron Ferber, UT (2010)

AWARDS

- Best paper award of Neutron Scattering Division within FY 2022
- ORNL Significant Event Award - 2016, for the completion of commissioning of polarization analysis at HYSPEC at SNS
- ORNL Significant Event Award - 2009 for construction completion and introduction in the user program of the HB2A diffractometer at HFIR.