

Curriculum Vitae

Dr. Gihan VELIŞA

DoB: 22th of February 1982, Medgidia, CT,
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Education:

- 2007-2011 **PhD - Materials Science and Engineering**
University of Bucharest, Faculty of Physics, Romania
PhD advisor: Prof. Dr. Stefan ANTOHE
- 2005-2007 **MSc - Nuclear Physics**
University of Bucharest, Faculty of Physics, Romania
- 2000-2005 **BSc - Nuclear Physics**
University of Bucharest, Faculty of Physics, Romania

Work experience:

- 2005-
present **Research Assistant, then Scientific Researcher, then Scientific Researcher III, then Scientific Researcher II**
Horia Hulubei National Institute for Physics and Nuclear Engineering (IFIN-HH), Magurele, IF, Romania
PI and Co-PI on fundamental and applied research projects in the fields of ion beam modification of materials with focus on the separate and combined effects of electronic and nuclear energy loss on defect evolution in oxide, carbide ceramics, and semiconductors. Tasks also include working with internal/external users on the instrumentation available at the second and first beam line end-stations of the 3 MV accelerator located at IFIN-HH, Magurele, Romania.
- 2015-2018 **Postdoctoral Research Associate**
Oak Ridge National Laboratory, Oak Ridge, TN, USA
Responsible of the research efforts on defects and ion-solids interactions in complex oxides ($SrTiO_3$ and $KTaO_3$) and in novel Ni-based concentrated solid-solution alloys. Duties also included publication of results in peer-reviewed journals and presentations at scientific conferences.
- 2014-2015 **Engineer Postdoc**
Université de technologie de Belfort Montbéliard, Montbéliard, France
Responsible of the research efforts on the description of damage build up mechanisms for a nanostructured multilayer system irradiated by one or several ion beams
- 2011-2013 **Engineer Postdoc**
Commissariat à l'Energie Atomique (CEA), Gif-sur-Yvette, France
Responsible of the research efforts on the ion-beam synthesis of nanoprecipitate in single crystals by simultaneous dual-beam ion implantation. Duties also

included publication of results in peer-reviewed journals and presentations at scientific conferences.

Management experience:

- 06/2022 -present **Technical coordinator of 1&3 Tandem Accelerators**
Horia Hulubei National Institute for Physics and Nuclear Engineering (IFIN-HH), Magurele, IF, Romania
- 12/2019 -04/2020 **Head of Tandem Accelerators Department**
Horia Hulubei National Institute for Physics and Nuclear Engineering (IFIN-HH), Magurele, IF, Romania
- 04/2019 -12/2019 **Deputy Head of Tandem Accelerators Department**
Horia Hulubei National Institute for Physics and Nuclear Engineering (IFIN-HH), Magurele, IF, Romania

Professional Activities, Honors, Awards:

- 2023 Horia Hulubei Award from Romanian Academy
<https://acad.ro/institutia/acte/premii/2021.pdf>
- 2023 Guest Editor for the special issue ECAART14 of Nuclear Instruments and Methods in Physics Research B.
<https://www.sciencedirect.com/science/article/pii/S0168583X23002768>
- 2022 Co-chair of 14th European Conference on Accelerators in Applied Research and Technology (ECAART14) held between 17th and 23rd of July, 2022 in Sibiu, Romania.
<https://ecaart14.nipne.ro/committees.php>
- 2018 Best presentation Award - EMRS 2018 (Symposium Y)
- 2017 Best Team Effort Award for The Intersection of Sound and Science Podcast Contest from DOE
- 2016 EFRC Early Career Network board member
- 2010 Serban Titeica Award for Junior researchers from NIPNE-HH
- 2005 Valedictorian Award from University of Bucharest – Romania

Research Grants and Fellowships - Project Coordinator:

- 2021 **Romanian National Authority for Scientific Research, CNCS – UEFISCDI**
PCE project: “*Breakthrough method for optical waveguides synthesis: The coming era of nanotechnology*” **Budget: 245.513,00 EUR**
- 2020 **IAEA Coordinated Research Project F11023**, IAEA Research Contract No. 24396/R0: “*Deuterium behaviour under heavy ion irradiation*” **Budget: 16.000,00 EUR**
- 2011 **Romanian National Authority for Scientific Research, CNCS – UEFISCDI**
Post-Doctoral Project: “*Micro-structural evolution of He-implanted nuclear ceramics: Role of temperature*” **Budget: 70.789,00 EUR**
- 2008 **Romanian National Authority for Scientific Research, CNCS – UEFISCDI**
Doctoral Project: “*Macroscopic and microscopic modifications induced by irradiation in thin films of A^{II}-B^{IV} compounds and nuclear ceramics*” **Budget: 12.189,00 EUR**

Coordination of BSc / MSc / PhD students training: MSc A. Pilz, CEA, France (2012), PhD C. Xu and L. Nuckols, UTK, USA(2020), Postdoc DR M.D. Mihai, IFIN-HH, Romania (2021-2023), PhD D. Iancu, IFIN-HH, Romania (2020-2023)

Journal Reviewer: <https://publons.com/researcher/2331087/gihan-velisa/>

Oral and invited talks at international conferences: International Conference on Radiation Effects in Insulators, International Conference on Ion Beam Modification of Materials, etc (information available at https://www.nipne.ro/7227-staff_info.html).

Invited speaker to prestige universities/national institutes: (i) Joint Research Activities at the 3 MV Tandetron of IFIN-HH (G. Velisa - seminar at NIMP, RO 11/02/2022) (ii) Joint Research Activities at the 3 MV Tandetron of IFIN-HH (G. Velisa - seminar at INFLPR, RO 16/02/2022), (iii) Patterning nanoprecipitate dispersion in model substrates by single and simultaneous dual beam ion implantations (G. Velisa - seminar at ORNL, US 12/08/2015); (iv) Patterning nanoprecipitate dispersion in model substrates by single and simultaneous dual beam ion implantations (seminar at HZDR, Germany, 28/05/2015); (v) Microstructural modifications in nuclear ceramics implanted with noble gases (seminar at CEA, France, 09/02/2012).

Publications: 59 publications in peer-reviewed ISI journals (information available at <http://orcid.org/0000-0003-4421-0790>). **H index: 19**

❖ [Articles published as lead/corresponding author in the last 6 years](#)

1. M.D. Mihai, D. Iancu, E. Zarkadoula, R.A. Florin, Y. Tong, Y. Zhang, W.J. Weber, **G. Velişa**, Athermal annealing of pre-existing defects in crystalline silicon, *Acta Materialia* 261 (2023) 119379. **IF = 9.4**
2. **G. Velişa**, F. Granberg, E. Levo, Y. Zhou, Z. Fan, H. Bei, F. Tuomisto, K. Nordlund, F. Djurabekova, W. J. Weber, Y. Zhang, Recent progress on understanding the temperature-dependent irradiation resistance ranking among NiFe, NiCoCr, and NiCoFeCr alloys: A review, *Journal of Materials Research* 38 (2023)1510–1526 **IF = 2.7**
3. D. Iancu, E. Zarkadoula, M.D. Mihai, C. Burducea, I. Burducea, M. Straticiuc, Y. Zhang, W. J. Weber, **G. Velişa**, Revealing two-stage phase transition process in defective KTaO₃ under inelastic interactions, *Scr. Mater.* 222 (2023) 11503. **IF = 6.3**
4. **G. Velişa**, R. F. Andrei, I. Burducea, A. Enciu, D. Iancu, D. A. Mirea, A. Spiridon, M. Straticiuc, Joint research activities at the 3 MV Tandetron™ from IFIN-HH, *Eur. Phys. J. Plus* 136 (2021) 1171. Citations: 3. **IF = 3.9**
5. **G. Velişa**, E. Zarkadoula, D. Iancu, M. D. Mihai, C. Grygiel, I. Monnet, B. Kombaiyah, Y. Zhang, W. J. Weber, Near-surface modification of defective KTaO₃ by ionizing ion irradiation, *J. Phys. D: Appl. Phys.* 54 (2021) 375302 (13pp). Citations: 4. **IF = 3.2**
6. **G. Velişa**, Z. Fan, M.L. Crespillo, H. Bei, W.J. Weber, Y. Zhang, Temperature effects on damage evolution in ion-irradiated NiCoCr concentrated solid-solution alloy, *J. Alloys. Comp.* 832 (2020) 154918. Citations: 3. **IF = 4.1**
7. **G. Velişa**, K. Jin, Z. Fan, C. Lu, H. Bei, W.J. Weber, L. Wang, Y. Zhang, Multi-axial and multi-energy channeling study of disorder evolution in ion-irradiated nickel, *J. Nucl. Mater.* 525 (2019) 92-101. Citations: 8. **IF = 2.5**
8. **G. Velişa**, E. Wendler, H. Xue, Y. Zhang, W.J. Weber, Revealing ionization-induced dynamic recovery in ion-irradiated SrTiO₃, *Acta Mat. Corr.* 172 (2019) 202-202. **IF = 7.2**
9. **G. Velişa**, E. Wendler, L-L Wang, Y. Zhang, W.J. Weber, Amorphization kinetics in strontium titanate at 16 and 300 K under argon ion irradiation, *J. Mater. Sci.* 54 (2019) 6066-6072. Citations: 4. **IF = 3.4**
10. **G. Velişa**, E. Wendler, L-L Wang, Y. Zhang, W.J. Weber, Ion mass dependence of irradiation-induced damage accumulation in KTaO₃, *J. Mater. Sci.* 54 (2019)149-158. Citations: 15. **IF = 3.4**
11. **G. Velişa**, E. Wendler, H. Xue, Y. Zhang, W.J. Weber, Revealing ionization-induced dynamic recovery in ion-irradiated SrTiO₃, *Acta Mat.* 149 (2018) 256-264. Citations: 13. **IF = 7.2**
12. **G. Velişa**, E. Wendler, S. Zhao, K. Jin, H. Bei, W. J. Weber, Y. Zhang, Delayed damage accumulation by athermal suppression of defect production in concentrated solid solution alloys, *Mater. Res. Lett.* 6(2) (2018) 136-141. Citations: 30. **IF = 7.4**
13. **G. Velişa**, M. W. Ullah, H. Xue, K. Jin, M. L. Crespillo, H. Bei, W. J. Weber, Y. Zhang, Irradiation-induced damage evolution in concentrated Ni-based alloys, *Acta Mat.* 135 (2017) 54-60. Citations: 40. **IF = 7.2**