

IONUT STEFANESCU | RESUME

- ▶ **Status:** M.Sc. Nuclear Astrophysics, Research Assistant
- ▶ **Fields:** Nuclear Physics, Nuclear Astrophysics, Gas detectors, Particle Detectors, Gamma Spectroscopy
- ▶ **Tools:** ROOT, GEANT4, C++, LISE++, \LaTeX , Microsoft Office



»»» Experience

2017 - present **Research Assistant** IFIN-HH, Romania

- ▶ Preparation, participation and data analysis of β -delayed proton decay of ^{27}P , experiment performed at Texas A&M Univ. in 2019
- ▶ Preparation and participation at various experiments within the group, NAG (Nuclear Astrophysics Group), at IFIN-HH and abroad - α capture reactions on nat. Si, Ni and Zn targets, light ion-ion fusion reactions (both topics studied at IFIN-HH); participation at 2 experiments in Japan: test of silicon detectors and associated electronics (HIMAC) and ^9C break-up (RIKEN - SAMURAI ^{18}O campaign).

2019 - 2020 **IPA Student fellowship** RIKEN, Nishina Center,
Spin-Isospin lab

- ▶ Participated in March 2020 at an experiment at HIMAC, Chiba, to test silicon detectors and associated electronics, through a $(p, p\alpha)$ reaction, using a ^{16}O beam (spokesperson - Junki Tanaka)
- ▶ In-lab activity and further participation at experiments in RIKEN strongly hindered as the Covid pandemic started in 2020.

2015 - 2017 **Physicist** IFIN-HH, Romania

- ▶ Participated at, and performed the experiment for the Master Thesis, the study of $^{12}\text{C}(^{13}\text{C},p)^{24}\text{Na}$ reaction. The experiment was performed in IFIN-HH, using the 3MV Tandem accelerator.
- ▶ Participated at the NAG group activity in various experiments at IFIN-HH and abroad - **2016:** β -delayed proton decay of ^{31}Cl ; **2017:** β -delayed proton decay of ^{35}K , both performed at Texas A&M Univ.

»»» Education

2017 - present **PhD Student** Doctoral School of
Physics, Univ. of
Bucharest

- ▶ PhD Thesis: **Resonance spectroscopy as an indirect method for nuclear astrophysics** (supervisors: Dr. Livius Trache & Dr. Catalin Borcea)
- ▶ Analysis and astrophysical interpretation of β -delayed proton decay of ^{27}P , an experiment which was used as an indirect method to study the radiative proton capture (p, γ) , on ^{26m}Al and therefore, its destruction in different stellar environments.

2013 - 2016 **Master Degree - Physics** Faculty of Physics, Univ.
of Bucharest

- ▶ Master Thesis: **In-beam and off-beam measurements of $^{13}\text{C}+^{12}\text{C}$ at energies around Coulomb barrier.** (supervisors: Dr. Livius Trache & Prof. Dr. Mihaela Sin)
- ▶ Data analysis of $^{12}\text{C}(^{13}\text{C},p)^{24}\text{Na}$ reaction. Cross section determination

2008 - 2013 **Bachelor Degree - Physics, Applied Engineering Sciences** Faculty of Physics, Univ.
of Bucharest

- ▶ Thesis title: **Visualization detectors for charged particles. Laboratory model for a cloud chamber** (in Romanian) (supervisor: Prof. Dr. Ionel Lazanu)
- ▶ Designed and built a cloud chamber model

»» Personal skills

- Languages: English (fluent), French (basic), Spanish (basic)
- Driving license: B, B1, AM

»» Publications - Articles

- Z. Elekes, V. Panin, ..., I.C. Stefanescu, ... et. al - "Shape coexistence in ^{66}Se ", *Physics Letters B* **844**:138072 (2023)
- A. I. Stefanescu, V. Panin, ..., I. C. Stefanescu, ... et. al - "Silicon tracker array for RIB experiments at SAMURAI", *Eur. Phys. J. A* **58**, 223 (2022)
- L. Stuhl, M. Sasano, ..., I. C. Stefanescu, ... et. al - Study of spin-isospin response of ^{11}Li neutron-drip-line nucleus with PANDORA, *J. Phys.: Conf. Ser.* **1643** 012107 (2020)
- N. T. Zhang, X. Y. Wang, ..., I. C. Stefanescu, ... et. al - Constraining the $^{12}\text{C}+^{12}\text{C}$ astrophysical S-factors with the $^{12}\text{C}+^{13}\text{C}$ measurements at very low energies, *Physics Letters B* **801**:135170 (2020)
- D. Tudor, L. Trache, A. I. Chilug, I. C. Stefanescu et. al - A facility for direct measurements for nuclear astrophysics at IFIN-HH - a 3 MV tandem accelerator and an ultra-low background laboratory, *NIM A*, **953**:163178 (2020)
- L. Stuhl, M. Sasano, ..., I. C. Stefanescu, ... et. al - Study of spin-isospin responses of radioactive nuclei with the background-reduced neutron spectrometer, PANDORA, *NIM B*, **463**:189-194 (2020)

»» Publications - Conference Proceedings

- A. I. Chilug, V. Panin, ..., I. C. Stefanescu, ... et. al - Nuclear Breakup and Coulomb Dissociation of ^9C Nucleus Studied at RIBF RIKEN, *JPS Conf. Proc.* **32**, 010057 (2020) - *Proceedings of 13th International Conference on Nucleus-Nucleus Collisions*
- A. I. Chilug, V. Panin, ..., I. C. Stefanescu, ... et. al - Study of the ^9C breakup through NP1412-SAMURAI29R1 experiment, *AIP Conference Proceedings* **2076**, 060001 (2019) - *Carpathian Summer School of Physics 2018 (CSSP18)*
- I. C. Stefanescu et. al - Decay spectroscopy as a tool for nuclear astrophysics, *AIP Conference Proceedings* **2076(1)**, 060008 (2019) - *Carpathian Summer School of Physics 2018 (CSSP18)*
- D. Tudor, A. I. Chilug, I. C. Stefanescu et. al - Experimental study of the $\alpha+^{64}\text{Zn}$ reaction in the Gamow region, *AIP Conference Proceedings* **2076(1)**, 060010 (2019) - *Carpathian Summer School of Physics 2018 (CSSP18)*
- I. C. Stefanescu et. al - AstroBox2E: a detection system for very low energy β -delayed proton decay, *J. Phys.: Conf. Ser.* **1024** 012007 (2018) - *FAIRNESS 2017: FAIR NExt generation Scientists 2017*
- I. C. Stefanescu et. al - In-beam measurements of $^{13}\text{C}+^{12}\text{C}$ fusion reaction cross section at energies around and below Coulomb barrier, *AIP Conference Proceedings* **1852**, 080011 (2017) - *Carpathian Summer School of Physics 2016 (CSSP16)*
- D. Tudor, A. I. Chilug, I. C. Stefanescu et. al - Activation measurements of $^{13}\text{C}+^{12}\text{C}$ fusion cross section at deep sub-barrier energies in IFIN-HH, *AIP Conference Proceedings* **1852**, 080012 (2017) - *Carpathian Summer School of Physics 2016 (CSSP16)*
- A. Apostol, I. C. Stefanescu, A. Pantelica - Determination of natural radioactivity in soil samples by high resolution low energy gamma ray spectrometry, *23-rd International Seminar on Interaction of Neutrons with Nuclei (ISINN-23)* (2015)