



# Alexandru-Nicolae State

**Date of birth:** 20/05/1992 | **Nationality:** Romanian | **Gender:** Male |  
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## ● WORK EXPERIENCE

20/07/2020 – CURRENT – Magurele, Romania

**DOCTORAL RESEARCH ASSISTANT** – HORIA HULUBEI NATIONAL INSTITUTE FOR R&D IN PHYSICS AND NUCLEAR ENGINEERING (IFIN-HH)

**Business or Sector** Professional, scientific and technical activities |

**Department** Gamma Driven Experiments Department - ELI-NP

01/12/2015 – 20/07/2020 – Magurele

**ENGINEER** – HORIA HULUBEI NATIONAL INSTITUTE FOR R&D IN PHYSICS AND NUCLEAR ENGINEERING (IFIN-HH)

The work experience includes accelerator physics and the fields of engineering required for development of experimental systems like:

- Control systems and system automations;
- Mechanical engineering;
- Vacuum engineering;
- Gas system engineering;
- Ion-beam engineering and instrumentations;
- Detector Physics.

**Business or Sector** Professional, scientific and technical activities |

**Department** Tandem Accelerators Department

27/01/2015 – 01/12/2015 – Magurele

**TECHNICIAN** – HORIA HULUBEI NATIONAL INSTITUTE FOR R&D IN PHYSICS AND NUCLEAR ENGINEERING (IFIN-HH)

**Business or Sector** Professional, scientific and technical activities |

**Department** Tandem Accelerators Department

12/06/2014 – 15/10/2014 – Magurele, Romania

**INTERNSHIP** – HORIA HULUBEI NATIONAL INSTITUTE FOR R&D IN PHYSICS AND NUCLEAR ENGINEERING (IFIN-HH)

**Business or Sector** Professional, scientific and technical activities |

**Department** Tandem Accelerators Department

## EDUCATION AND TRAINING

01/10/2017 – CURRENT

**DOCTORAL STUDENT** – Doctoral School of Engineering and Applications of Lasers and Accelerators

01/10/2015 – 29/06/2017

**MASTER'S DEGREE** – University Politehnica of Bucharest

**Field of study** Faculty of Applied Sciences

17/10/2011 – 01/06/2015

**BACHELOR DEGREE** – University Politehnica of Bucharest

**Field of study** Faculty of Electronics, Telecommunications and Information Technology

17/10/2007 – 17/06/2011

**HIGH SCHOOL DIPLOMA** – I.C. Bratianu Highschool

09/01/2017 – 16/03/2017

**JOINT UNIVERSITIES ACCELERATOR SCHOOL (JUAS) GRADUATION DIPLOMA** – European Scientific Institute

- The Science of Particle Accelerators
- The Technology & Applications of Particle Accelerators.

20/09/2016 – 15/11/2016

**INTRODUCTION TO NUCLEAR AND PARTICLE PHYSICS GRADUATION DIPLOMA** – Center for Training and Specialization in the Nuclear Field

## LANGUAGE SKILLS

Mother tongue(s): **ROMANIAN**

Other language(s):

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken production	Spoken interaction	
<b>ENGLISH</b>	C2	C2	C1	C1	C2
<b>FRENCH</b>	B1	B1	B1	B1	B1

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user

## ● DIGITAL SKILLS

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### My Digital Skills

CATIA V5/V6 | NI LABVIEW | CCNA 1 - Introduction to Networks | CCNA 2 | COMSOL Multi-Physics | Coreldraw | Conhecimento bsico dos programas OriginPro | Microsoft Windows and Office (and Open Office) | Windows, MacOS, Linux(wsl) | MATLAB&Simulink

## ● PUBLICATIONS

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### Scientific papers

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- The slow control of the FRS Ion Catcher, Nucl.Instrum. Methods Phys. Res. A, 1034 (2022). A. State et al
- INCREASE: An in-cell reaction system for multi-nucleon transfer and spontaneous fission at the FRS ion catcher, Nucl.Instrum. Methods Phys. Res. B, 512 (2022), 83 - 90. A. Rotaru ... A. State
- Experimental set-up for high precision nuclear physics measurements at the IFIN-HH 9MV tandem accelerator, Nucl.Instrum. Methods Phys. Res. B, 499 (2021), 53 - 60. A. State et al
- Mass measurements of As, Se and Br nuclei and their implication on the proton-neutron interaction strength towards the N=Z line, Phys. Rev. C 103, 034319, I. Mardor, ... A. State
- Production of exotic nuclei via MNT reactions using gas cells, Acta Phys. Pol. B. 51 (2020), A. Spataru, ... A.State
- Optimization of photo-fission fragment production in the Elisol setup at ELI-NP, U.P.B. Sci. Bull., Series A, Vol. 82, Iss. 1, 2020, D. Nichita, ... A. State.
- Ion Extractions from gas cells with supersonic jets formed in Laval nozzles, U.P.B. Sci. Bull., Series A, Vol. 82, Iss. 1, 2020, A. State et al
- MULTI-NUCLEON TRANSFER REACTIONS IN  $^{238}\text{U}+^{64}\text{Ni}$  USING GRAZING MODEL, U.P.B. Sci. Bull., Series A, Vol. 82, Iss. 1, 2020, A. Spataru, ... A. State
- OPTIMIZATION OF PHOTO-FISSION FRAGMENT PRODUCTION IN THE ELISOL SETUP AT ELI-NP, U.P.B. Sci. Bull., Series A, Vol. 82, Iss. 1, 2020, D. Nichita, ... A. State
- SIMULATION OF CIRCULAR RADIO-FREQUENCY CARPETS FOR ION EXTRACTION FROM CRYOGENIC STOPPING CELLS, U.P.B. Sci. Bull., Series A, Vol. 81, Iss. 3, 2019, A. Rotaru, ... A. State
- The ELI-NP IGISOL radioactive ion beam facility, NIMB, Volume 461, 15 December 2019, Pages 130-132, P. Constantin, ... A. State
- Status of ELI-NP and opportunities for hyperfine research, Hyperfine Interactions volume 240, Article number: 49 (2019), D. Balabanski, ... A. State
- The cryogenic stopping cell of the IGISOL facility at ELI-NP, IL NUOVO CIMENTO 42 C (2019) 60, EUNPC 2018, P. Constantin, ... A. State
- Applications at the 3 MV Tandetron<sup>TM</sup> from IFIN-HH, AIP Conference Proceedings 2076(1):050001, I. Burducea, ... A. State
- Performance studies of X3 silicon detectors for the future ELISSA array at ELI-NP, Journal of Instrumentation, Volume 13, May 2018, S. Chesnevskaya, ... A. State
- Characterization of X3 Silicon Detectors for the ELISSA Array at ELI-NP, EPJ Web of Conferences 165, 01011 (2017), S.Chesnevskaya, ... A. State

## ● DRIVING LICENCE

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Driving Licence: B

## ● CONFERENCES AND SEMINARS

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27/05/2018 – 01/06/2018 – Giens, France

**EURORIB 2018**

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Poster: "Gas flow simulations in the cryogenic stopping cell for the IGISOL facility at ELI-NP".

26/04/2018 – ELI-NP, Magurele

## **Developments and solutions for the cryogenic stopping cells at LEB/FAIR and ELI-NP**

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Presentation: "CFD simulations and gas system design for the HADO-CSC."

18/08/2021 – 27/08/2021 – Sinaia, Romania

## **Carpathian Summer School of Physics 2021**

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Presentation: "RIB formation with supersonic jets at ELI-NP"

### ● **COMMUNICATION AND INTERPERSONAL SKILLS**

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#### **Ability to communicate effectively in a foreign language and good pedagogical skills**

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- Participation in international conferences with papers presented in English.
- Trainer for the LabVIEW course during the "Summer school of science and technology from Magurele". (27.08.2018 - 3.09.2018). Class hands-on practice with Arduino and LabVIEW.
- Trainer for the "Introduction in robotics with Arduino" course and Science Lab coach during the "Summer school of science and technology from Magurele". (24.08.2019 - 6.09.2019).

### ● **OTHER ACTIVITIES**

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#### **International schools**

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- Carpathian Summer School of Physics 2021 (18.08.2021 - 27.08.2021).
- ChETEC Training School in Nuclear Astrophysics Using Direct Methods (10.04.2018 - 21.04.2018).
- 15th Russbach School on Nuclear Astrophysics (18.03.2018 - 23.03.2018).
- Carpathian Summer School of Physics 2016 (26.06.2016 - 09.07.2016)