



Sandra Elena NICHIFOR

Nationality: Romanian | **Gender:** Female | **Address:** Romania (Home)

WORK EXPERIENCE

10/09/2019 – CURRENT Bucharest, Romania

SCIENTIFIC RESEARCHER NATIONAL INSTITUTE FOR AEROSPACE RESEARCH "ELIE CARAFOLI" - INCAS

Activities:

- Numerical simulations in Matlab, respectively Simulink
- Analysis of data and flight technical-tactical characteristics
- Testing and handling of a Stewart platform and ABB 7600 and 4600 robots
- Material purchases and hardware items
- Implementation and programming of control algorithms for autonomous landing of an aerial platform on a mobile platform
- Flight performance calculation
- Calculation of static and dynamic longitudinal and lateral-directional stability in flight and terminal phases (takeoff, landing)

Business or Sector Professional, scientific and technical activities |

Department Systems Unit - System Dynamics compartment |

Address Bd Iuliu Maniu 220, 061126, Bucharest, Romania | **Email** incas@incas.ro | **Website** incas.ro

01/10/2019 – 30/09/2022 Bucharest, Romania

DOCTORAL ASSISTANT UNIVERSITY POLITEHNICA OF BUCHAREST

Seminar activity within the Faculty of Aerospace Engineering, University Politehnica of Bucharest. Discipline "Solid dynamics. Analytical Mechanics".

Business or Sector Education |

Department Mechanics - Faculty of Biotechnical Systems Engineering, University Politehnica of Bucharest |

Address Splaiul Independenței 313, 060042, Bucharest, Romania | **Email** secretariat_isb@upb.ro |

Website isb.pub.ro

20/09/2017 – 09/09/2019 Bucharest, Romania

SCIENTIFIC RESEARCH ASSISTANT NATIONAL INSTITUTE FOR AEROSPACE RESEARCH "ELIE CARAFOLI" - INCAS

Activities:

- Determination of model airplane and quadcopter dynamic equations
- Realization of experimental model of control and navigation for satellite systems
- Generating dynamics for spacecraft in specific reference frames and validating algorithms to be implemented on spacecraft in specific reference frames
- Collision detection analysis of two spacecraft
- Stewart Experimental Platform Installation

Business or Sector Professional, scientific and technical activities |

Department Systems Unit - Mechatronics compartment | **Address** Bd Iuliu Maniu 220, 061126, Bucharest, Romania |

Email incas@incas.ro | **Website** incas.ro

25/06/2016 – 08/09/2016 Bucharest, Romania

INTERNSHIP NATIONAL INSTITUTE FOR AEROSPACE RESEARCH "ELIE CARAFOLI" - INCAS

Activities:

- Structural analysis using Natran and Patran programs, within the Structures and Materials department
- General aerodynamics concepts regarding the wind tunnel, within the Department of Flow Physics

Business or Sector Professional, scientific and technical activities |

Department Physics of Flows and Structures and Materials |

Address Bd Iuliu Maniu 220, 061126, Bucharest, Romania | **Email** incas@incas.ro | **Website** incas.ro

01/10/2015 – 16/06/2016 Bucharest, Romania

INTERNSHIP UNIVERSITY POLITEHNICA OF BUCHAREST

Internship carried out at the "Petru Maior" Technical College, Bucharest

Obtaining a certificate of completion of the psychopedagogical module

Activities:

- Participation in the Mechanics course hours
- Teaching notions of "Rotational Movement Organs", respectively Shafts, and "Auxiliary Organs", Sliding Bearings

Business or Sector Education | **Department** Mechanics |

Address Splaiul Independenței 313, 060042, Bucharest, Romania | **Website** upb.ro

● **EDUCATION AND TRAINING**

23/09/2019 – CURRENT Bucharest, Romania

PHD STUDENT Faculty of Biotechnical Systems Engineering, University Politehnica of Bucharest

Address Splaiul Independenței 313, 060042, Bucharest, Romania | **Website** isb.pub.ro | **Field of study** Mechanics |

Thesis Dynamics of multibody systems in a gravitational field

26/09/2017 – 08/07/2019 Bucharest, Romania

MASTER'S DEGREE Faculty of Aerospace Engineering, University Politehnica of Bucharest

"Aeronautical and Space Structures" specialization

Disciplines studied: Dynamics of space flight, Mathematical models in the mechanics of continuous media, Non-linear finite elements in aeronautics, Vibrations of mechanical systems, Stability of space vehicles.

Address Splaiul Independenței 313, 060042, Bucharest, Romania | **Website** aero.pub.ro |

Field of study Aerospace Engineering - Aerodynamics field |

Thesis Numerical simulations of internal and external hypersonic supersonic flows

01/10/2013 – 08/07/2017 Bucharest, Romania

BACHELOR'S DEGREE Faculty of Aerospace Engineering, University Politehnica of Bucharest

"Aerospace Constructions" specialization.

Subjects studied: Laminar boundary layer theory. High speed aerodynamics, Study of aircraft evolutions, Theory of flight stability, Numerical methods in fluid dynamics, Finite elements in aerospace engineering, Aircraft mechanics.

Address Splaiul Independenței 313, 060042, Bucharest, Romania | **Website** aero.pub.ro |

Field of study Aerospace Engineering - Aerodynamics field |

Thesis Numerical simulation of supersonic-hypersonic flows

● **LANGUAGE SKILLS**

Mother tongue(s): **ROMANIAN**

Other language(s):

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken production	Spoken interaction	
ENGLISH	B2	B2	B1	B2	B1
SPANISH	B1	B1	A2	B1	A2

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

● **DIGITAL SKILLS**

Microsoft Office | Social media / Social network | Microsoft PowerPoint | Microsoft Word | Microsoft Excel | Zoom | MATLAB, Matlab Simulink | Communication (Email, Messenger, Skype) | Msc Adams | AAA - Advanced Aircraft Analysis | NASTRAN / PATRAN | ANSYS | RobotStudio - RAPID

● **ADDITIONAL INFORMATION**

PUBLICATIONS

"Dynamic modeling of a 6-dof parallel manipulator" – 2023

Authors: **Sandra-Elena Nichifor**, Ion Stroe

"Kinematics Modeling of the ABB7600 Robot" – 2023

Authors: **Sandra-Elena Nichifor**, Ion Stroe

"AUTONOMOUS AEROSPACE TECHNOLOGIES IN SPACESYSLAB – A ROBOTIC-BASED RENDEZVOUS AND DOCKING SYSTEM"

– 2022

Authors: Achim IONIȚĂ, **Sandra NICHIFOR**

"Automatic approach procedure of a flying vehicle on a mobile platform using backstepping controller"

– 2022

Authors: Florin COSTACHE, **Sandra Elena NICHIFOR**, Nicolae APOSTOLESCU, Mihaela COSTEA, Achim IONIȚĂ

"Vertical Take Off Landing of UAV on Stewart Platform" – 2022

Authors: **Sandra Elena NICHIFOR**, Ion STROE, Mihaela COSTEA, Florin COSTACHE

"Real-Time interaction between an ABB 7600 Robot and a Stewart Platform" – 2022

Authors: Florin COSTACHE, **Sandra Elena NICHIFOR**, Nicolae APOSTOLESCU, Mihaela COSTEA, Achim IONIȚĂ

"Efficient Conflict Method in Air Traffic Management" – 2021

Authors: Mihaela-Luminița Costea, Gabriela-Liliana Stroe, Emil Costea, **Sandra-Elena Nichifor**, Raluca Bălașa, Daniel-Eugen Crunțeanu

"Conflict Resolution analysis for en-route Air Traffic Control" – 2021

Authors: Mihaela-Luminița Costea, Gabriela-Liliana Stroe, Emil Costea, Raluca Bălașa, **Sandra-Elena Nichifor**, Daniel-Eugen Crunțeanu

"Using Lagrange Equations to study the relative motion of a mechanism" – 2020

Authors: Roxana PETRE, **Sandra-Elena NICHIFOR**, Andrei CRĂIFĂLEANU, Ion STROE

"TWQH Attitude Control Experiments on Horizon Ground Simulator and Flight Test" – 2020

Authors: Ștefan STOIAN, Dragoș Daniel ION-GUȚĂ, **Sandra Elena NICHIFOR**, Florentin ȘPERLEA, Achim IONIȚĂ

"Air Cushion Robots Ground Testing Bed Experiments and Control Algorithm for Autonomous Rendezvous and Docking"

– 2019

Authors: Achim IONIȚĂ, Dragoș Daniel ION-GUȚĂ, Marina ANDREI, Thien Van NGUYEN, Nicolae APOSTOLESCU, Andrei LUNGOCI, Ștefan STOIAN, **Sandra Elena NICHIFOR**

DRIVING LICENCE

Driving Licence: AM

Driving Licence: B1

Driving Licence: B

CONFERENCES AND SEMINARS

11/01/2023 – 23/06/2023 – Paris, France

IFAR-X Challenge Collaborative Aircraft Design & Early Career Network Conference 2023

To collaboratively evolve towards a Future Green Aviation meeting Flightpath 2050 Goals

11.01.2023 - 18.06.2023 (online workshop)

19.06.2023 - 23.06.2023 - IFAR ECN Paris

24/11/2022 – 25/11/2022 – Sibiu, Romania

Emerging and Disruptive Technologies Impact on Global Security Presentation

- Achim IONIȚĂ, **Sandra NICHIFOR**, "AUTONOMOUS AEROSPACE TECHNOLOGIES IN SPACESYSLAB – A ROBOTIC-BASED RENDEZVOUS AND DOCKING SYSTEM"

13/10/2022 – 14/10/2022 – National Institute for Aerospace Research "Elie Carafoli" - INCAS

International Conference of Aerospace Sciences "AEROSPATIAL 2022" Presentation

- Florin COSTACHE, **Sandra Elena NICHIFOR**, Nicolae APOSTOLESCU, Mihai TUDOSE, Daniel VIȘAN, Achim IONIȚĂ, "Use of robotic system for SIL/HIL simulation of an aerospace vehicle approach on a mobile platform"
- **Sandra Elena NICHIFOR**, Florin COSTACHE, Nicolae APOSTOLESCU, Mihai TUDOSE, Daniel VIȘAN, Achim IONIȚĂ, "Autonomous landing movement process between two robotic platforms"

28/10/2021 – 29/10/2021 – National Institute for Aerospace Research "Elie Carafoli" - INCAS

The 39th "Caius Iacob" Conference on Fluid Mechanics and its Technical Applications Presentation

- **Sandra Elena NICHIFOR**, Ion STROE, Florin COSTACHE, Mihaela COSTEA, "Automatic landing procedure of a flying vehicle on a mobile platform using optical flux"
- Florin COSTACHE, **Sandra Elena NICHIFOR**, Mihaela COSTEA, Achim IONIȚĂ, "Automatic approach procedure of a flying vehicle on a mobile platform using backstepping controller"

20/09/2021 – 26/09/2021 – Rhodos, Grecia

19th International Conference of Numerical Analysis and Applied Mathematics Presentation

- **Sandra-Elena NICHIFOR**, Ion STROE, Mihaela-Luminița COSTEA, Florin COSTACHE, "Vertical Take Off Landing Of UAV On Stewart Platform"
- Mihaela-Luminita COSTEA, Gabriela-Liliana STROE, Emil COSTEA, **Sandra-Elena NICHIFOR**, Raluca BĂLAȘA, Daniel-Eugeniu CRUNȚEANU, "Efficient Conflict Resolution method in Air Traffic Management"
- Mihaela-Luminita COSTEA, Gabriela-Liliana STROE, Emil COSTEA, Raluca BĂLAȘA, **Sandra-Elena NICHIFOR**, Daniel-Eugeniu CRUNȚEANU, "Conflict Resolution analysis for en-route Air Traffic Control"
- Florin COSTACHE, **Sandra-Elena NICHIFOR**, Nicolae APOSTOLESCU, Mihaela-Luminița COSTEA, Achim IONIȚĂ, "Real-Time interaction between an ABB 7600 Robot and a Stewart Platform"

15/10/2020 – 16/10/2020 – National Institute for Aerospace Research "Elie Carafoli" - INCAS

International Conference of Aerospace Sciences AEROSPATIAL 2020 Member of the organizing committee.

Presentation

- **Sandra-Elena NICHIFOR**, Roxana PETRE, Andrei CRĂIFĂLEANU, Ion STROE, "Calculus of compass robotic arm in inertial and non-inertial reference frames"

01/10/2020 – 02/10/2020 – Dubrovnik, Croatia

22nd International Conference on Advances in Space Engineering, ICASE 2020 Presentation

- Roxana PETRE, **Sandra-Elena NICHIFOR**, Andrei CRĂIFĂLEANU, Ion STROE, "Using Lagrange Equations to study the relative motion of a mechanism"

04/12/2019 – 07/12/2019 – Amsterdam, Olanda

EREA Young Research Follow-Up Event

07/11/2019 – 08/11/2019 – National Institute for Aerospace Research "Elie Carafoli" - INCAS

The 38th "Caius Iacob" Conference on Fluid Mechanics and its Technical Applications Member of the organizing committee.

27/05/2019 – 30/05/2019 – National Institute for Aerospace Research "Elie Carafoli" - INCAS

8th European Aeronautics Days - AERODays 2019 Member of the organizing committee.

15/05/2019 – 16/05/2019 – National Institute for Aerospace Research "Elie Carafoli" - INCAS

7th International Workshop on Numerical Modelling in Aerospace Sciences "NMAS 2019" Member of the organizing committee.

27/06/2018 – 01/07/2018 – Constanța, Romania

2nd edition of the Space Launching Systems and the 14th edition of the International Conference on Design, Modelling and Optimization (SLS&OPTIROB 2019) Presentation

- Achim IONIȚĂ, Dragoș Daniel ION-GUȚĂ, Marina ANDREI, Thien Van NGUYEN, Nicolae APOSTOLESCU, Andrei LUNGOCI, Ștefan STOIAN, **Sandra Elena NICHIFOR**, "Air Cushion Robots Ground Testing Bed Experiments and Control Algorithm for Autonomous Rendezvous and Docking"

23/10/2018 – 24/10/2018 – National Institute for Aerospace Research "Elie Carafoli" - INCAS

EREA Young Researchers Event 2018 "Preparing successful H2020 proposals"

HONOURS AND AWARDS

02/10/2020

"Best Paper Award" – International Conference on Advances in Space Engineering Paper "Using Lagrange Equations to study the relative motion of a mechanism"

Authors: Roxana PETRE, **Sandra-Elena NICHIFOR**, Andrei CRĂIFĂLEANU, Ion STROE

COURSES

16/07/2021 – 16/07/2021

Training ATC RADAR Simulator System

15/01/2020 – 16/01/2020

Training Tobii Eye Tracking System - BIOPAC

18/10/2019 – 18/10/2019

Training Physiological signal acquisition and processing system BIOPAC MP160
