

CURRICULUM VITAE

PhD. Eng. Ilinca NASTASE

Associate Professor, Building Services Engineering Faculty, Technical University of Civil Engineering of Bucharest

Director of the Doctoral School of the Technical University of Civil Engineering of Bucharest

Head of Advanced Research Center for Building Physics and Ambient Quality – CAMBI

President of the Civil Engineering Commission of the National Council for University Degrees, Diplomas and Certificates (CNATDCU)

Cochair of the Technology and Research Committee (TRC) – of the Federation of European Heating, Ventilation and Air Conditioning associations - REHVA

1. DATE AND PLACE OF BIRTH: 22th August 1979, Bucharest, Romania

2. STUDIES AND DIPLOMAS:

Engineer Diploma (Bachelor of Science): 2002, (examination mark: 10/10), Technical University of Construction Bucharest, Department of Civil Engineering in Foreign Languages: French; General average mark on study years: 9.21/10.

Master of Science diploma: 2003, University of La Rochelle, France, Mechanics and Civil Engineering, Energetic of built environment

PhD Diploma: thesis title « Analyse des jets lobés en vue de leur intégration dans les unités terminales de diffusion d'air », 2007, thesis accomplished by collaboration of Technical University of Construction Bucharest and University of La Rochelle, domain: Civil engineering, specialisation: Fluid Mechanics, 2006.

Post Doctoral dissertation: 2008, University of La Rochelle, France, Mechanical and Civil Engineering Department, specialty: Experimental Fluid Mechanics

Habilitation Thesis: 2014, Technical University of Civil Engineering of Bucharest

Languages : **French:** speak - excellent; write - excellent (DALF - Diplôme Approfondi de la Langue Française), **English** : speak - excellent; write - excellent., **Romanian:** native language

PROFESSIONAL QUALIFICATIONS:

- **October 2010: Energy auditor for Buildings, Energy auditor, First degree certificate (February 2014)**
- **December 2020: Fire safety designer, Fire safety designer certificate (February 2021)**

3. PROFESSIONAL EXPERIENCE, FORMER EMPLOYERS:

Assistant Lecturer and Researcher (ATER – Attaché temporaire à l'Enseignement et à la Recherche) : during the academic years 2003-2007 and 2007/ spring of 2008 at the Mechanical and Civil Engineering Department, University of La Rochelle, France

Research Engineer: October 2007- May 2008 at LEPTIAB (Laboratory of Study of Transfer Phenomena Applied to Buildings), University of La Rochelle, France

Researcher: since May 2008 – Advanced Research Center for Ambiental Quality and Building Physics Building Services Department from the Technical University of Civil Engineering in Bucharest

Lecturer: during October 2008 - September 2012 in the chair of Hydraulic, thermal and environmental building services from the Building Services Faculty of the Technical University of civil Engineering

Associate Professor: since September 2012

Teaching (undergraduate): thermodynamics, elementary fluid mechanics (course and laboratory), fluid mechanics (course and laboratory), thermal fluids laboratory, air conditioning, industrial ventilation, advanced measurement

techniques for fundamental fluid mechanics, measurement techniques for fluid mechanics applied to buildings, jet flow theory.

Research contracts:

1. Nzeb Ready - Enhancing Market Readiness For Nzeb Implementation - H2020-LC-SC3-EE-2020-2, "Stimulating demand for sustainable energy skills in the construction sector", 2021-2023
2. DivAirCity, The power of diversity and social inclusion as a mean for reducing air pollution and achieving green urban nexus in climate neutral cities, Call: HORIZON-LC-CLA-11-2020-Innovative nature-based solutions, for carbon neutral cities and improved air quality, 2021-2025
3. XTREME - Innovative system to extend the range of electric vehicles at improved thermal comfort - PN-III-P2-2.1-PED-2019-4249, **Coordinator**, 2020-2022, (100k Euro)
4. BISCUIT - BISCUIT Building integrated solar crop dryer for food preservation in urban farming applications, - PN-III-P2-2.1-PED-2019-4165, 2020-2022, (100k Euro)
5. SmartMonWater -Sistem inteligent de monitorizare în timp real a calității apei, PN-III-P2-2.1-PTE-2019-0394, 2020-2022, (100k Euro)
6. World Bank Energy and Extractives Global Practice ECA region Project - Energy Efficiency Improvement through Renovation of Buildings, Romania's buildings stock data collection and verification 2019 (10keuro)
7. CIA-CLIM, Intelligent buildings adaptable to the effects of climate change, PN-III-P1-1.2-PCCDI-2017-0391, 2018-2021, (1000 kEuro)
8. CONTUR, Emerging technologies for counteracting effects induced by turbulent flows of fluid media PN-III-P1-1.2-PCCDI-2017-0868, **Responsible of UTCB team**, (till 1.03.2019), 2018-2021, (1000 kEuro)
9. PHANTOM - Passive flow control for heat and mass transfer enhancement of impinging jets PN-III-P4-ID-PCE-2016-0758, **Coordinator**, 2017-2019, (200 kEuro)
10. QUEST - Advanced air diffusion system of the crew quarters for the ISS and deep space habitation systems, STAR-CDI-C3-2016-577, **Coordinator**, 2017-2019, (450 kEuro)
11. SMARTSENSE - Real time SMART application for urban air quality management respecting the SENSitive categories of population, PN-III-P2-2.1-PED-2016-1285 (150 kEuro), **Coordinator**, 2017-2018 (150 kEuro)
12. SOLECT - Environment improvement of Sludge dewatering from the wastewater treatment system of SEAU Glina by Optimizing the Local Effluent Capture and Treatment, PN-III-P2-2.1-BG-2016-0158 (100 kEuro)
13. SCOPE-intelligent Solar Collector with Phase change materials intEgration – PN-III-P2-2.1-PED-2016-1154 (100 kEuro)
14. SWAN34 Small Ducted Wind Turbine Equipped with Passive Flow Control Devices - PN-III-P2-2.1-PED-2016-0631 (100 kEuro)
15. AFDPA - Antiflutter Demonstrator with Piezoelectric Actuation, **Coordinator**, PN-II-PT-PCCA-2013-4 (350 kEuro)
16. INSIDE - Innovative strategies of HVAC systems for high indoor environmental quality in vehicles PN-II-PT-PCCA-2013-6 (350 kEuro)
17. EQUATOR: Advanced strategies for high performance indoor Environmental QUALity in Operating Rooms- PN-II-PT-PCCA-2011-3.2-0512, 2012-2016, **Coordinator** (750 kEuro)
18. INADEVA: INtelligent Air Diffusion for healthy environments: advanced strategies and EVALuation methods - PN-II-ID-2011-3-0835, 2011-2016, **Coordinator** (350 kEuro)
19. Terminal inovative devices for HVAC air diffusion – PNII RP CNCSIS 6, 2008- 2010, **Coordinator** (150 kEuro)
20. HAM: Integrated HEAT-AIRFLOW-MOISTURE modeling within enclosures - experimental validation, PN-II-ID-JRP-RO-FR-2012-0071, 2013-2015, (350 kEuro)
21. Optimization of Indoor Environmental Quality & Energy Efficiency in educational facilities using a multi-criteria decision approach PN-II-RU-TE-2012-3-0108, 2013-2015, (200 kEuro)
22. IEQ: Atmospheric pollutants transfer indoors. Tools for indoor pollution level prediction and occupants - PN-II-RU-TE-2011-3-209, 2011-2013, (200 kEuro)
23. MAACH : Advanced methods of analysis and control for hemodynamics with application in peripheral vascular surgery, 2008 –2011, CNMP grant (750 kEuro)
24. ECOLOC: Environmental management in urban residential areas in the context of climate change, 2008 –2011, CNMP r grant, (750 kEuro)
25. FLUBAT: Suivi et compréhension expérimental des FLUX d'air dans les BATiments – projet ANR (1500 kEuro)
coordinatrice du projet: Dr. Amina Meslem, Université de La Rochelle
26. INDUC : Climatisation à haute induction pour les voitures ferroviaires, 2006- 2008, en coopération avec Alstom Transport, financé par le FEDER, le gouvernement français et la Region Poitou Charentes, coordinatrice du projet: Dr. Amina Meslem, Université de La Rochelle

27. INDUBAT : Climatisation à haute induction pour le bâtiment, 2005-2009, en coopération avec CIAT, financé par ANR et ADEME, coordinatrice du projet: Dr. Amina Meslem, Université de La Rochelle
28. VAICTEUR AIR² - Pour un air sain confortable et économe dans le bâtiment, 2008-2013, financé par OSEO, coordinateur du projet: CIAT
29. Mentor for the Project PD 2011 - Proiect PN-II-RU-PD-2011-3-0099 Title: Fluid dynamics analysis for innovative personalized ventilation diffusers for automotive and building applications of Dr. Florin BODE

Other educational or institutional development contracts

30. EU-CONEXUS - European University for Smart Urban Coastal Sustainability; 612599-EPP-1-2019-1-FREPPKA2-EUR-UNIV 2019-2023 (membru PhD – PC)
31. EU-CONEXUS RESEARCH FOR SOCIETY - EU-CONEXUS-RFS Call: H2020-IBA-SwafS-Support-1-2020 (Support for the Research and Innovation Dimension of European Universities), 2021-2025 (WP4 team member)
32. CNFIS-FDI-0125-2018 - Instrumente suport pentru cresterea calitatii rezultatelor stiintifice si promovarea deontologiei si eticii academice la nivelul IOSUD – UTCB – INSTRUCT 1 – team member
33. CNFIS-FDI-0354-2019 - INSTRUCT 2 – team member
34. CNFIS-FDI-0370-2020 - INSTRUCT 3 – team member
35. CNFIS-FDI-0370-2021 - INSTRUCT 4 – team member



SCIENTIFIC ACTIVITY

The visibility of the scientific contributions.

Invited lectures : • *Experimental techniques in ventilation applications - A state of the art of modern investigation methods applied to flows in buildings*, a key note lecture at GRASMECH' 2009, 26-27 November 2009 in Brussels at Royal Military Academy

• *An overview of Micro Particle Image Velocimetry and applications*, a key note lecture at the first International Summer School of Rheology organized by the Romanian Society of Rheology, August 2010, Cluj-Napoca.

• *Measuring techniques of velocity distributions in liquids*, a key note lecture at the third International Summer School of Rheology organized by the Romanian Society of Rheology, august 2017, Gura Humorului.

• *Ventilation strategies for improving air distribution in vehicles and other confined spaces*, invited lecture at Aalto University, December 2018

• *Thermal Comfort in occupied spaces - changing the paradigm for energy efficiency*, invited lecture at International Conference on Energy, Environment and Economics (ICEEE2020), August 2020

• *Aerial transmission of SARS-COV-2 - The role of HVAC systems during COVID-19 times: source control, ventilation, air distribution*, ClimaMed 2021, May 2021

32 WOS Journal Papers, 30 WOS Conference Proceedings

Hirsch Index – Web of Science: 14, Scopus: 14, Google Scholar: 18

Member of the Editorial Board of International Journal of Ventilation, INCAS Bulletin, Mathematical Modelling in Civil Engineering

Reviewer for Renewable Energy Reviews, Energy, Applied Thermal Engineering, Building and Environment

Advisory Member of the Scientific Council of the National Institute of Aerospace Research – permanent invited member

Evaluator for the Romanian Agency of Higher Education Quality, ARACIS, since June 2019

Evaluator for the Latvian Agency of Higher Education Quality, since May 2021

Evaluator for projects funded by the EU Commission, Romanian Research Agency UEFSCDI, Moldavian Research Agency.

4. LIST OF PUBLICATIONS

- PhD thesis: Nastase, I., *Analyse des jets lobés en vue de leur intégration dans les Unités Terminales de Diffusion d'air*, Thèse, Génie civil. 2007, Université de La Rochelle.
- Habilitation thesis:
- Nastase, I., *Intelligent air diffusion for healthy environments advanced flow control and evaluation methods*, Habilitation thesis, Civil and building systems engineering 2014, Technical University of Civil Engineering of Bucharest
- Dissertation de DEA - Nastase, I., *Analyse d'un jet lobé par anémométrie Laser Doppler*, DEA, Génie civil et mécanique. 2003, Université de La Rochelle.

Research Articles:

- [RS 1] I. Nastase, A. Meslem, Experimental investigation on the near and far field behaviour of an isothermal lobed jet, WSEAS Transactions on Fluid Dynamics, (1) 5 : 414-422, 2006
- [RS 2] I. Nastase, A. Meslem, K. Abed-Meraim, An experimental investigation on the asymmetric evolution of a lobed jet flow, International Journal of Dynamics of Fluids, Vol.2, No.1, 2006
- [RS 3] I. Nastase, A. Meslem, Passive control of jet flows using lobed nozzle geometries, *Mécanique & Industries*, 8, 101-109, 2007
- [RS 4] A. Meslem, I. Nastase, K. Abed-Meraim, Experimental investigation of a lobed jet flow mixing performance, Journal of Engineering Physics and Thermophysics , 81 (1) 2008 - ISSN : 1062-0125, et Inzhenerno-Fizicheskii Zhurnal 80 (6), 2007
- [RS 5] I. Nastase, A. Meslem, Vortex dynamics and entrainment mechanisms in low Reynolds orifice jets, *Journal of Visualization*, 11 (4), 2008
- [RS 6] I. Nastase, A. Meslem, T. Bowmans , Vortical structures analysis in jet flows using a classical 2D-PIV system and time resolved visualization image processing, *Journal of Flow Visualization and Image Processing*, 15 (9), (2008)
- [RS 7] I. Nastase, A. Meslem, and P.Gervais, Primary and secondary vortical structures contribution in the entrainment of low Reynolds number jet flow, *Experiments in Fluids*, 44, (2008)
- [RS 8] I. Nastase, An experimental study of flows from innovative air diffusion grilles, *Acta Technica Napocensis, Series: Applied Mathematics and Mechanics*, 52(4), (2009)
- [RS 9] I. Nastase, A. Meslem, Vortex Dynamics and mass entrainment in turbulent lobed jets with and without lobe deflection angles, *Experiments in Fluids*, (2010), 48 (4)
- [RS 10] A. Meslem, I. Nastase, F. Allard, Passive mixing control for innovative air diffusion terminal devices for buildings, *Building and Environment*, Volume 45, Issue 12, December 2010
- [RS 11] A. Meslem, M. El Hassan, I. Nastase, Analysis of jet entrainment mechanism in the transitional regime by time-resolved PIV, *Journal of Visualization*, 2010
- [RS 12] I. Nastase, Experimental investigation of thermal comfort with innovative grilles in a real scale room, *Scientific Journal of Technical University of Civil Engineering in Bucharest - Series: Mathematical Modelling in Civil Engineering*, Vol.3-4, March, 2011
- [RS 13] I. Nastase, A. Meslem, V. Iordache, I. Colda, Lobed grilles for high mixing ventilation - An experimental analysis in a full scale model room, *Building and Environment*, Volume 46, Issue 3, March 2011
- [RS 14] V. Iordache, I. Nastase, A. Damian, I. Colda, Average permeability measurements for an individual dwelling in Romania, *Building and Environment*, Volume 46, Issue 5, May 2011, Pages 1115-1124
- [RS 15] M. Boulouvar, A. Meslem, B. Imine, I. Nastase, Numerical study of a turbulent jet flow issued from lobed diffuser, *Mechanika*, Volume 17, Issue 2, 2011
- [RS 16] A. Meslem, A. Dia, C. Beghein, M. El Hassan, I. Nastase, P. Vialle, Three turbulence models comparison in the prediction of parallel lobed jets for perforated panel optimization, *Building and Environment*, Volume: 46 Issue: 11 Pages: 2203-2219 DOI: 10.1016/j.buildenv.2011.04.037
- [RS 17] I. Nastase, A. Meslem, M. El Hassan, Image processing analysis of vortex dynamics of lobed jets from three dimensional diffusers, *Fluid Dynamics Research*, 43 (6), 2011
- [RS 18] M. Kristiawan, A. Meslem, I. Nastase, V. Sobolik, Wall shear rates and mass transfer in impinging jets. Comparison of circular convergent and cross-shaped orifice nozzles, *International Journal of Heat and Mass*

Transfer, 55 (1-3), pp. 282-293, 2012

[RS 19] F. Bode, I. Nastase, C. Croitoru, Mesh Dependence Study Using Large Eddy Simulation of a Very Low Reynolds Cross-Shaped Jet, Mathematical Modelling in Civil Engineering – Scientific Journal, ISSN 2066-6926, ON-LINE ISSN:2066-6934, Vol.7, No.4, December, 2011, p.16-22

[RS 20] C. Croitoru, I. Nastase, F. Bode, The Influence of the Geometric Form of the Virtual Thermal Manikin on Convective Flow, Mathematical Modelling in Civil Engineering – Scientific Journal, ISSN 2066-6926, ON-LINE ISSN:2066-6934, Vol.7, No.4, December, 2011, p.55-64

[RS 21] A. Meslem, I. Nastase, F. Bode, C. Beghein, Optimization of a Lobed Perforated Panel Diffuser - A Numerical Study of Orifice Arrangement, International Journal of Ventilation, Vol. 11 (3) 2012

[RS 22] F. Bode, I. Nastase, C. Croitoru, RANS models comparison for a cross-shaped jet flow with straight lobes, Mathematical Modelling in Civil Engineering – Scientific Journal, ISSN 2066-6926, ON-LINE ISSN:2066-6934, Vol.8, No.4, December, 2012, p.14-20(6p)

[RS 23] A. Meslem, A. Dia, C. Beghein, A. Ammar, I. Nastase, M. El Hassan, Numerical simulation of free cross-shaped jet, Mechanika, Vol.4, 2012

[RS 24] C. Croitoru, I. Nastase, F. Bode, Thermal comfort assesemnt for different ventilation strategies using a CFD approach, Mathematical Modelling in Civil Engineering – Scientific Journal, ISSN 2066-6926, ON-LINE ISSN:2066-6934, Vol.8, No.4, December, 2012, p.36-45(10p)

[RS 25] Meslem, A., Bode, F., Nastase, I., Martin, O., Optimization of lobed perforated panel diffuser: Numerical study of orifice geometry,(2012) Modern Applied Science, 6 (12), pp. 59-73.

[RS 26] A. Meslem, F. Bode, C. Croitoru, I. Nastase, Comparison of turbulence models in simulating jet flow from a cross-shaped orifice, European Journal of Mechanics-B/Fluids 44, 100-120, 2013

[RS 27] A. Meslem, V. Sobolik, F. Bode, K. Sodjavi, Y. Zaouali, I. Nastase, C. Croitoru, Flow dynamics and mass transfer in impinging circular jet at low Reynolds number. Comparison of convergent and orifice nozzles, International Journal of Heat and Mass Transfer 67, 25-45, 2013

[RS 28] I. Nastase, R. Dolinski, F. Bode, A. Meslem, C. Croitoru, Influence of the choice of the inlet turbulence intensity on the performance of numerically simulated low Reynolds jet flows, INCAS Buletin, 5(4), 2013

[RS 29] A. Dogeanu, A. Iatan, F. Bode, C. Croitoru, I. Nastase, Conception of a simplified seated thermal manikin for CFD validation purposes, Revista Romana de Inginerie Civila - Romanian Journal of Civil Engineering, 4(4), 2013

[RS 30] I. Ursu, I. Nastase Ilinca, S. Caluianu Sorin, A. Iftene, A. Toader, Intelligent control of HVAC systems, Part I: Modeling and synthesis, INCAS Bulletin, vol 5(1), 2013

[RS 31] I. Ursu, I. Nastase Ilinca, S. Caluianu Sorin, A. Iftene, G. Tecuceanu, A. Toader, Intelligent control of HVAC systems. Part II: perceptron performance analysis, INCAS Bulletin, vol 5(4), 2013

[RS 32] C. Croitoru, A. Vartires, F. Bode, A. Dogeanu, Nastase Ilinca, Survey Evaluation of the Indoor Environment Quality in a Large Romanian Hospital, INCAS Bulletin, vol 5(3), 2013

[RS 33] A. Meslem, I. Nastase, Cross and Clover shaped orifice jets analysis at low Reynolds number, Thermal Sciences, 166-116, 2013

[RS 34] R. Dolinski, F. Bode, I. Nastase, A. Meslem, C. Croitoru, Influence of the choice of the inlet turbulence intensity on the performance of numerically simulated moderate Reynolds jet flows-Part 1-the near exit region of the jet, INCAS Bulletin 5 (4), 25, 2014

[RS 35] Z. Bolashikov, A. Melikov, S. Michal, I. Nastase, A. Meslem, Improved inhaled air quality at reduced ventilation rate by control of airflow interaction at the breathing zone with lobed jets, HVAC&R Research, Volume 20, Issue 2, 2014

[RS 36] A. Meslem, R. Greffet, I. Nastase, A. Ammar, Experimental investigation of jets from rectangular six-lobed and round orifices at very low Reynolds number (2014) Meccanica, 49 (10), pp. 2419-2437.

[RS 37] T.A. Salaoru, M. Andrei, I. Nastase, Optimization study of using PTC for human body heating dissipation, INCAS Bulletin 6 (2), 85, 2014

[RS 38] A. Dogeanu, B. Florin, A. Iatan, C. Croitoru, I. Nastase, Conception of a simplified seated thermal manikin for CFD validation purposes, Revista Romana de Inginerie Civila 5 (1), 27, 2014

[RS 39] F. Bode, K. Sodjavi, A. Meslem, I. Nastase, Numerical prediction of wall shear rate in impinging cross-shaped jet at moderate Reynolds number, (2014) UPB Scientific Bulletin, Series D: Mechanical Engineering, 76 (2), pp. 251-258.

[RS 40] C. Croitoru, I. Nastase, A. Dogeanu, F. Bode, A. Meslem, Thermal comfort models for indoor spaces and vehicles - current capabilities and future perspectives, Renewable and Sustainable Energy Reviews, 44, pp. 304-318, 2015

[RS 41] I. Udrea, C. Croitoru, I. Nastase, R. Crutescu, V. Badescu, Experimental and theoretical thermal comfort analyses in higher education buildings in Bucharest, (2015) UPB Scientific Bulletin, Series D: Mechanical Engineering, 77 (2), pp. 145-156.

[RS 42] C. Croitoru, I. Nastase, F. Bode, A. Meslem, Thermodynamic investigation on an innovative unglazed

transpired solar collector, *Solar Energy*, 131, pp. 21-29, 2016

[RS 43] P Bragança, K Sodjavi, A Meslem, I Nastase, Passive control strategy for mixing ventilation in heating mode using lobed inserts, *Energy and Buildings* 133, 512-528, 2017

[RS 44] M Mira, CV Croitoru, I Nastase, Thermal evaluation of a perforated panel for solar collector model for air pre-heating, *Revista Romana de Inginerie Civila* 8 (4), 2017

[RS 45] M Dan, P Danca, I Ursu, I Nastase, Advanced thermal manikin with neuro-fuzzy control, *Revista Romana de Inginerie Civila* 8 (4)

[RS 46] Abdelouhab Labihi, Faïçal Aitlahbib, Hassan Chehouani, Brahim Benhamou, Mohammed Ouikhalfan, Cristiana Croitoru, Ilinca Nastase, Effect of phase change material wall on natural convection heat transfer inside an air filled enclosure, *Applied Thermal Engineering*, 126, 2017

[RS 47] I Udrea, C Croitoru, I Nastase, R Crutescu, V Badescu, First adaptive thermal comfort equation for naturally ventilated buildings in Bucharest, Romania, *International Journal of Ventilation* 17(3), 149-165, 2018

[RS 48] F Bode, I Nastase, C Croitoru, M Sandu, A Dogeanu, I Ursu, Preliminary Numerical Studies for the Improvement of the Ventilation System of the Crew Quarters on Board of the International Space Station, *INCAS Bulletin* 10 (2), 137-143

[RS 49] I Udrea, C Croitoru, I Nastase, R Crutescu, V Badescu, A new adaptive thermal comfort model for the Romanian climate (vol 173, pg 151, 2020) *Proceedings of the institution of civil engineers-engineering sustainability*

[RS 50] F Bode, C Patrascu, I Nastase, Heat and mass transfer enhancement strategies by impinging jets: A literature review, *Thermal Science*, 227-227, 2020

[RS 51] F Bode, A Meslem, C Patrascu, I Nastase, Flow and wall shear rate analysis for a cruciform jet impacting on a plate at short distance, *Progress in Computational Fluid Dynamics, an International Journal* 20, Volume 20, Issue 3, 2020

[RS 52] AS Bejan, C Teodosiu, CV Croitoru, T Catalina, I Nastase, Experimental investigation of transpired solar collectors with/without phase change materials, *Solar Energy* 214, 478-490, 2020

[RS 53] MR Georgescu, A Meslem, I Nastase, Accumulation and spatial distribution of CO₂ in the astronaut's crew quarters on the International Space Station, *Building and Environment* 185, 107278, 2020

[RS 54] C Croitoru, I Nastase, F Bode, M Sandu, Assessment of virtual thermal manikins for thermal comfort numerical studies. Verification and validation, *Science and Technology for the Built Environment*, 1-17, 2021

[RS 55] P Danca, F Bode, A Meslem, C Croitoru, M Sandu, I Nastase, C Lungu, L Batali, Experimental investigation of thermal vehicular environment during the summer season, *Science and Technology for the Built Environment*, 1-13, 2021

[RS 56] MR Georgescu, A Meslem, I Nastase, F Bode, An alternative air distribution solution for better environmental quality in the ISS crew quarters, accepted to *The International Journal of Ventilation*, 2021

[RS 57] MR Georgescu, A Meslem, I Nastase, M Sandu, Numerical and Experimental Study of the International Space Station Crew Quarters Ventilation, accepted to *Journal of Building Engineering*, 2021

[RS 58] C Croitoru, I Nastase, F Bode, M Sandu, Assessment of virtual thermal manikins for thermal comfort numerical studies. Verification and validation, *Science and Technology for the Built Environment*, 1-17, 2021

[RS 59] L Tacutu, F Bode, I Nastase, C Croitoru, A Dogeanu, Experimental and numerical study on the thermal plumes of a standing and lying human in an operating room, *Science and Technology for the Built Environment*, 1-17, 2021

Technical articles

[RT 1] A. Meslem, I. Nastase, Conception innovante des unités terminales de diffusion de l'air, *Salles Propres*, No. 87 octobre 2013

[RT 2] Cristiana Croitoru, Elena Rastei, Ilinca Nastase, Scheme de evaluare pentru cladiri existente - Studiu de caz (Schémas d'évaluation des bâtiments existants - Étude de cas), *Romanian Journal of Building Services*, Vol.1 (1), 2015

Editor of conference volumes :

[EA 1] Anton Anton, Corneliu Balan, Mugur Ciprian Balan, Florin Bode, Walter Bosschaerts, Cristiana Croitoru, Christian Inard, Amina Meslem, Ilinca Nastase, Mihnea Sandu (Editors), *Proceedings of Sustainable Solutions for Energy and Environment, EENVIRO 2016*, 26-28 October 2016, Bucharest, Romania, Volume 112, Pages 1-690 (March 2017)

[EA 2] M.C. Balan, F. Bode, C. Croitoru, A. Dogeanu, A. Georgescu, C. Georgescu, I. Nastase and M. Sandu (Editors) *E3S Web of Conferences*, Volume 85 (2019), *Proceedings of EENVIRO 2018 – Sustainable Solutions for Energy and Environment*, Cluj Napoca, Romania, October 9-13, 2018

[EA3] Prof. Shin-ichi Tanabe, Prof. Hui Zhang, Prof. Jarek Kurnitski, Prof. Manuel Carlos Gameiro da Silva, Associate

Prof. Ilinca Nastase, Associate Prof. Pawel Wargocki, Prof. Guangyu Cao, Prof. Livio Mazzarela, Prof. Christian Inard (Editors), Accepted for publication in E3S Web of Conferences, Proceedings of Clima 2019 World Congress, Bucharest, 26-29 May 2019

National conference proceedings

- [CN 1] A. Chichinas, C. Ghiaus, A. Domsa, I. Nastase, O metoda simpla de detectare a defectelor intr-o centrala de climatizare a aerului cu flux simplu, A XXXIX Conferinta National de Instalatii : Instalatii pentru Mileniul 3, 20-22 octobrie 2004, Sinaia, Roumanie.
- [CN 2] I. Nastase, A. Meslem, Performance de mélange d'un jet lobé et identification des vortex associés, Journées Activités Universitaires de Mécanique, 31 août et 1 septembre 2006, La Rochelle, France.
- [CN 3] I. Nastase, A. Meslem, Structure tourbillonnaire des jets lobés et pouvoir de mélange, Congrès Français de Mécanique, août 2007, Grenoble, France.
- [CN 4] A. Meslem, M. El Hassan, I. Nastase, Dynamique tourbillonnaire et entrainement dans la région initiale d'un jet rond et d'un jet marguerite à bas nombre de Reynolds , 19e congrés Français de Mécanique, 24-28 august, Marseille, France.
- [CN 5] A. Meslem, I. Nastase, O. Martin, Sur la validation expérimentale des modèles de turbulence. Application à un jet d'air lobé, Journées AUGC/IBPSA, Chambéry, 6-8 juin 2012
- [CN 6] C. Croitoru, I. Nastase, Alegerea modelului de turbulența pentru un caz de convecție natural a unui corp uman situate într-o încăpere ventilată, "Instalații pentru construcții și economia de energie" iulie 2012
- [CN 7] I. Nastase, Experimental investigation of thermal comfort with innovative grilles in a real scale room, 1st Young Research Conference of TUCEB, 18-19 noiembrie 2010, Bucuresti
- [CN 8] A. Meslem, I. Nastase, C. Beghein, Optimization of Lobed perforation panel diffuser – Numerical study of orifices arrangement, Ventilation 2012, The 10th International Conference on Industrial Ventilation, September 17-19, Paris, France
- [CN 9] A. Dogeanu, C. Croitoru, I. Nastase, A review on the main thermal comfort models for indoor spaces and their capabilities, YRC Conference of TUCEB, November 2012
- [CN 10] I. Ursu, I. Nastase, S. Caluianu, A. Iftene, A. Toader, Intelligent control synthesis of HVAC systems, RCEPB 2013, The 5th Romanian Conference on Energy Performance of Buildings (RCEPB-V), 29-30th of May, 2013, Bucharest, Romania
- [CN 11] C. Croitoru, I. Nastase, A. Vartires, A. Dogeanu, Monitorizarea calitatii mediului interior intr-un centru clinic universitar din Bucuresti , Conferinta Instalatii pentru constructii si economia de energie, Iasi, iulie 2013
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- [CN 13] I. Nastase, C. Croitoru, A. Dogeanu, V. Iordache, F. Bode, M. Sandu, Laboratory testing of innovative perforated panel for mixing ventilation, RCEPB 2016
- [CN 14] I. Nastase, Thermal comfort – changing the paradigm for energy efficiency, RCEPB 2018

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- [CI 2] A. Meslem, I. Nastase, O. Martin, Instabilités primaires et secondaires d'un jet d'air turbulent asymétrique et pouvoir de mélange, 8ème Séminaire International sur la Physique Energétique, 11-12 novembre 2006, Béchar, Algérie.
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- [CI 4] I. Nastase, A. Meslem, Analyse du mécanisme de détachement tourbillonnaire et quantification de la performance de mélange d'un jet lobé, VIIIème Colloque Interuniversitaire Franco-Québécois, mai 2007, Montréal, Québec.
- [CI 5] I. Nastase, A. Meslem, T. Bowmans, Vortex dynamics analysis in jet flows using 2D-Planar PIV and high-speed Laser Tomography image processing, 13th International Symposium on Flow Visualization and the 12th French Congress FLUVISU, 1-4 juillet 2008, Nice, France.
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- [CI 13] A. Meslem, E. Nithiyannanathan., M. El Hassan, R. Candane, I. Nastase, Numerical simulation of a turbulent jet flow issued from a daisy-shaped orifice, 7th International Conference on Heat Transfer, Fluid Mechanics and Thermodynamics (HEFAT), 19-20 July 2010, Antalya, Turkey
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- [CI 60] M Sandu, I Nastase, F Bode, CV Croitoru, L Tacutu, Preliminary Study on a Reduced Scaled Model Regarding the Air Diffusion inside a Crew Quarter on Board of the ISS, E3S Web of Conferences 32, 01015, 2018
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- [CI 66] Laurentiu Tacutu and Ilinca Nastase, Experimental and numerical investigation on the convective thermal plume around the head of the standing and lying human body EENVIRO 2018, accepted for publication in E3S Web of Conferences
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- [CI 75] Paul-Alexandru Danca, Florin Bode, Angel Dogeanu, Cristiana Croitoru, Mihnea Sandu, Amina Meslem and Ilinca Nastase, Experimental study of thermal comfort in a vehicle cabin during the summer season, Clima 2019 World Congress, accepted for publication in E3S Web of Conferences
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- [CI 78] Laurentiu Tacutu, Ilinca Nastase, Florin, Angel Dogeanu, Cristiana Croitoru, Local and general ventilation system for an operating room with surgeons and patient, Clima 2019 World Congress, accepted for publication in E3S Web of Conferences
- [CI 79] Paul Dancă, Ilinca Nastase, Florin Bode, Cristiana Croitoru, Angel Dogeanu and Amina Meslem, Evaluation of the thermal comfort for it's occupants inside a vehicle during summer - XXIIInd National Conference on Thermodynamics, with International Participation NACOT 2019

Oral presentation in international conferences (other than for the previous conference papers)

- [CIS 1] I. Nastase, A. Meslem, Vortex dynamics and entrainment mechanisms in lobed jets, 60th annual meeting of the APS division of Fluid Dynamics Mechanics, 18-20 novembre 2007, Salt Lake City, USA (Bulletin of the American Physical Society, 52 (12), 2007)
- [CIS 2] I. Nastase, A. Meslem, I .Colda, Innovative air diffusion grilles for improved mixing of air in buildings, 30th

AIVC conference "Trends in High Performance Buildings and the role of Ventilation", 1–2 October 2009, Berlin, Germany

[CIS 3] A. Dogeanu, A. Iatan, C. Croitoru, I. Nastase, Conception of a real human shaped thermal manikin for comfort assesment, 8th International PhD & DLA Symposium, October 2012

Key Note lectures

[KN 1] Experimental techniques in ventilation applications - A state of the art of modern investigation methods applied to flows in buildings, a key note lecture at GRASMECH' 2009, 26-27 November 2009 in Brussels at Royal Military Academy

[KN 2] An overview of Micro Particle Image Velocimetry and applications, a key note lecture at the first International Summer School of Rheology organized by the Romanian Society of Rheology, august 2010, Cluj-Napoca.

[KN 3] Measuring techniques of velocity distributions in liquids, a key note lecture at the third International Summer School of Rheology organized by the Romanian Society of Rheology, august 2017, Gura Humorului

[KN 4] Ventilation strategies for improving air distribution in vehicles and other confined spaces, invited lecture at Aalto University, December 2018

[KN 5] Thermal Comfort in occupied spaces - changing the paradigm for energy efficiency, invited lecture at International Conference on Energy, Environment and Economics (ICEEE2020), August 2020

[KN 6] Aerial transmission of SARS-COV-2- The role of HVAC systems during COVID-19 times: source control, ventilation, air distribution, invited lecture at the international Conference Climamed 2021 (May 2021)

Patents

[B 1] R0130182-A2, Orientable diffuser with enhanced induction achieved by passive flow control for customized ventilation, Assignee: UNIV BUCURESTI TEHNICA CONSTR, Inventor(s): BODE F, NASTASE I, Derwent Primary Accession Number: 2015-317506

[B 2] A 2018 00463 Solar façade (Ventilated opaque façade element for passive solar energy absorption with integrated phase change materials), Assignee: UNIV BUCURESTI TEHNICA CONSTR, Inventor(s): Cristiana Verona Croitoru, Florin Ioan Bode, Ilinca Nastase, Mihnea Sandu, Angel Mădalin Dogeanu, Andrei Stelian Bejan

Learning ressources (Courses, MOOCs,...)

[L1] A. Vartires, I. Nastase, Instalații de ventilare și climatizare – Lucrări practice, Editura Conspress 2010

[L2] I. Nastase, C. Croitoru, Equipements et systèmes de ventilation et climatisation – travaux pratiques, Editura Universitară 2011

[L3] I. Nastase, C. Croitoru, Echipamente și sisteme pentru ventilarea și climatizarea clădirilor - Note de curs, Editura Universitară 2012

[L4] I. Nastase, C. Croitoru, Installations de ventilation et climatisation - première partie et deuxième, Support de cours électronique

[L5] I. Nastase, C. Croitoru, Installations de ventilation industrielle - première partie et deuxième, Support de cours électronique

[L6] F.Bode, I. Nastase, M. Sandu – Modelarea si simularea incendiilor în constructii

[L7] F. Bode, I. Nastase, Modelarea si simularea incendiilor în constructii – Aplicații cu Pyrosim, Suport electronic pentru Masterul de Securitate la Incendiu, 2020

[L8] Cătălin Teodosiu, Vlad Iordache, Mihnea Sandu, Cristiana Croitoru, Florin Bode, Ilinca Năstase, Metodologia cercetării științifice pentru doctorat, Conspress 2021

[L9] C. Croitoru, I. Nastase, F. Bode, Calitatea ambiantală în mediul interior construit - Confort, metode de evaluare, principii de distribuție a aerului, Conspress, 2021

[L10] I. Nastase, C.Croitoru, Equipements et systèmes pour la ventilation et climatisation des bâtiments, Editura Printech 2021, (ISBN) : 978-606-23-1248-0

[L11] F. Bunea, P. Dancă, I. Nastase Determinarea vitezelor în curgeri cu ajutorul imaginilor de particule – PIV. Noțiuni generale și aplicații (ediție cd-rom, 2021) ISBN: 978-973-0-34566-7.

[L12] I. Nastase – *Safe building operation during COVID-19* – REHVA training course 2020 (Modules 1.4 - The role of HVAC systems during COVID-19 times: source control, ventilation, hygiene requirements, 2.2 - Airflow management, 4.2 - Industrial buildings (production hall, logistic halls & workshops), 4.3 - Industrial buildings (production hall, logistic halls & workshops), 4.8.2 - Wellness and swimming pools)

5. OTHER SKILLS:

Technical skills and competences

Expert in PIV, LDV, CTA, IR techniques, Technical advice as an expert in metrology.

Computer skills and competences

Fluent, Pyrosim/FDS, Gambit, Ansys CFX, StarCD, SolidWorks, AutoCAD, MathCAD, MATLAB, CoolPack, Engineering Equation Solver (EES)

Additional information

Member of professional associations:

Federation of European Heating, Ventilation and Air Conditioning associations (REHVA)

Romanian Association of Building Services Engineers (AIR)

Date: 1.06.2021

Ilinca NASTASE

