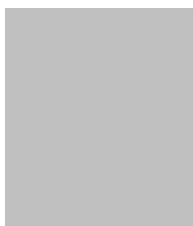


PERSONAL INFORMATION

BOSIOC Ilie Alin



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WORK EXPERIENCE

2024-present

Associate Professor

Politehnica University Timișoara, Romania

- Teaching disciplines: Fluid Mechanics, Hydraulic Turbines, Centrifugal Pumps, Experimental Measurements in Hydraulic Machines, Hydroelectric Power Plants and Pumping Stations, Turbomachinery (courses, laboratories, seminars and projects)
- Research in Hydraulic Machinery – Experimental investigation

Business or sector: Teaching and research

2018-2024

Lecturer

Politehnica University Timișoara, Romania

- Teaching disciplines: Fluid Mechanics, Hydraulic Turbines, Centrifugal Pumps, Experimental Measurements in Hydraulic Machines (courses, laboratories, seminars and projects)
- Research in Hydraulic Machinery – Experimental investigation

Business or sector: Teaching and research

2013-2018

Assistant Professor

Politehnica University Timișoara, Romania

- Teaching disciplines: Fluid Mechanics, Hydraulic Turbines, Centrifugal Pumps, Experimental Measurements in Hydraulic Machines (courses, laboratories, seminars, and projects)

Business or sector: Teaching and research

2011-2013

Post-Doctoral Researcher

Romanian Academy – Timisoara Branch, Romania

- Magneto-rheological device for reducing the instabilities in hydraulic turbines. Coordinator: Dr.Fiz. LADISLAU VEKAS.

Business or sector: Research

EDUCATION AND TRAINING

21.10.-05.11.2024

Mobility projects for researchers (MC2024)

Department of Fluid Mechanics and Hydraulic Machinery, University of Rijeka, Croatia
Research stage in hydraulic turbomachinery: 3D reconstruction techniques of hydraulic turbines mounted in powerplants, PN-IV-P2-2.2-MC-2024-0309.

05-17.03.2017 Mobility projects for researchers (MC2017)

HES-SO Valais-Wallis, Switzerland

- Image-based velocity measurement method using a high-speed camera without laser, project PN-III-P1-1.1-MC-2017-1620.

06.07.2015-26.09.2015 International Short Visit Grant, FNS Switzerland

HES-SO Valais-Wallis, Switzerland

- Development and implementation of a dynamic method to measure the performances of hydraulic machines, project IZK0Z2_163500.

2007-2011 PhD Degree

Politehnica University of Timișoara, Romania

- Swirling flow control in the conical diffuser of hydraulic turbines. Coordinator: Prof.dr.ing. Romeo SUSAN-RESIGA.

2002-2007 Mechanical Engineering – bachelor's degree

Faculty of Mechanical Engineering, Politehnica University of Timișoara, Romania

- Fluid Mechanics, Hydraulic Turbines, Centrifugal Pumps, Pumping Stations.

PERSONAL SKILLS

Mother tongue(s) Romanian

Other language(s)

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	C1/C2	C1/C2	C1/C2	C1/C2	C1/C2
French	B1/B2	B1/B2	B1/B2	B1/B2	B1/B2

Communication skills Good communications skills acquired during the teaching and research activity.

Organisational / managerial skills

Organizational and managerial skills developed due to my participation as a director or team member in the following projects and conferences:

- International research projects: 2
- National research projects: 6 (4 as Director/Coordinator)
- Research projects with the industry: 12 (2 as Director)
- Member in the organizer committee of the conferences: 7

Job-related skills

- Within the research and teaching activity I have gained skills in: Fluid Mechanics and Hydraulic Machinery, Experimental investigation in Hydraulic Machinery, Design of Hydraulic components.

Digital competence

SELF-ASSESSMENT				
Information processing	Communication	Content creation	Safety	Problem solving
Proficient user	Proficient user	Proficient user	Proficient user	Proficient user

Levels: Basic user - Independent user - Proficient user
 Digital competences - Self-assessment grid

- good command of office suite and photo editing (MS-Office, Adobe Photoshop)
- good command of scientific packages: Catia, AutoCAD, Mathcad, ANSYS, MATLAB, EPANET, BSA Flow Software

Other skills ▪ traveling, swimming.

Driving licence Driving licence category: B

ADDITIONAL INFORMATION

Publications (Relevant ISI Journals)

1. Tanasa C., **Bosioc A.I.**, Stuparu A., Muntean S., Susan-Resiga R., 2023, A Perspective Review of Passive Techniques Applied to Control the Swirling Flow Instabilities from the Conical Diffuser of Hydraulic Turbines, Applied Mechanics, 76(1), pp. 10801.
2. **Bosioc A.I.**, Szakal R., Stuparu A., Susan-Resiga R., 2023, Numerical Analysis of the Flow by Using a Free Runner Downstream the Francis Turbine, Int. Journal of Turbomachinery, Propulsion and Power, 8(2), pp. 14.
3. Szakal R., Mecea D., **Bosioc A.I.**, Borbath I., Muntean S., 2021, Design and testing a magneto-rheological brake with cylindrical configuration, Proceedings of the Romanian Academy Series A – Mathematics Physics, 22(2), pp. 189-197.
4. **Bosioc A.I.**, Tanasa C., 2020, Experimental study of swirling flow from conical diffusers using the water jet control method, Renewable Energy, 152, pp. 385-398.
5. Drăghici I., Muntean S., **Bosioc A.I.**, Gînga G., Anton L.E., 2016, Unsteady pressure field analysis at pump inlet equipped with a symmetrical suction elbow, Publishing House of the Rom. Academy, Proc. of the Romanian Academy, Series A: Mathematics, Physics, Technical Sciences, Informational Science, vol. 17(3), pp. 237-244, ISSN:1454-9069, <http://www.acad.ro/sectii2002/proceedings/doc2016-3/07-%20Muntean.pdf>
6. Javadi A., **Bosioc A.I.**, Nilsson H., Muntean S., Susan-Resiga R., 2016, Experimental and Numerical Investigation of the Precising Helical Vortex in a Conical Diffuser, with Rotor-Stator Interaction - ASME. J. Fluids Eng., 138(8), 081106, <http://fluidsengineering.asmedigitalcollection.asme.org/article.aspx?articleID=2516182>.
7. Susan-Resiga R., Muntean S., Stuparu A., **Bosioc A.I.**, Tanasa C., Ighisan C., 2016, A variational model for swirling flow states with stagnant region, European Journal of Mechanics - B/Fluids, Vol.55, Part 1, pp. 104–115, [doi:10.1016/j.euromechflu.2015.09.002](https://doi.org/10.1016/j.euromechflu.2015.09.002).
8. Totorean A.F., **Bosioc A.I.**, Bernad S.I., Susan-Resiga R., 2015, Critical Flow Regions In The Coronary By-Pass Graft Anastomosis, Proceedings of the Romanian Academy, Series A: Mathematics, Physics, Technical Sciences, Information Sciences, vol. 16(2), pp. 201-201, ISSN: 1454-9069, <http://www.acad.ro/sectii2002/proceedings/doc2015-2/11Bernad.pdf>.
9. Tănasă, C., Susan-Resiga, R., Muntean, S., and **Bosioc, A.I.**, 2013, Flow-Feedback Method for Mitigating the Vortex Rope in Decelerated Swirling Flows, Journal of Fluids Engineering, Vol. 135, article 061304;
10. **Bosioc, A.I.**, Susan-Resiga R., Muntean S., and Tănasă, C. 2012, Unsteady Pressure Analysis of a Swirling Flow With Vortex Rope and Axial Water Injection in a Discharge Cone, Journal of Fluids Engineering, Vol. 134, article 081104;
11. Tănasă C., **Bosioc A.I.**, Muntean S., Susan-Resiga R., 2011, "Flow-feedback control technique for vortex rope mitigation from conical diffuser of hydraulic turbines", Proceedings of the Romanian Academy, Series A: Mathematics, Physics, Technical Sciences, Information Sciences, vol. 12(2), pp. 125-132, ISSN 1454-9069, <http://www.acad.ro/sectii2002/proceedings/doc2011-2/07-Tanasa.pdf>;
12. **Bosioc A.I.**, Tănasă C., Muntean S. and Susan-Resiga R., 2010, Pressure recovery improvement in a conical diffuser with swirling flow using water jet injection, Publishing House of the Rom. Academy, Proc. of the Romanian Academy, Series A: Mathematics, Physics, Technical Sciences, Informational Science, vol. 11(3), pp. 245-252, ISSN:1454-9069, <http://www.acad.ro/sectii2002/proceedings/doc2010-3/08-Bosioc.pdf>.

National research projects and research project with industry - Director

National research projects

1. Efficient water jet for improving the flexibility in operation of hydraulic turbines, PED 20 / 2025, PN-IV-P7-7_1-PED-2024-1113, MEC / UEFISCDI.
2. Free Runner concept for swirling flow control at the outlet of hydraulic turbines, TE 179 /2019, PN-III-P1.1-TE-2019-1594, MEC / UEFISCDI
3. Innovative solution of magneto-rheological clutch for improving the cavitation performances of centrifugal pumps - iRheoDev, PN-II-RU-TE-2014-4-1089, 2015 - 2017, MEC - UEFISCDI.
4. Magneto-rheological device for swirling flow control, PN-II-RU-PD-2011-3-0165, 2011-2013, MEC / UEFISCDI

Projects with industry

5. Services of magneto-rheological measurements, BC 65/2020, INCDTIM Cluj Napoca

6. Numerical Simulation of the Heat Convection for a Washing Machine Heating System Function of the Thickness of Limestone Layer, 2014, ctr. UPT nr. 96/2014, S.C. Zoppas Industries Romania S.R.L.

Patents

1. Susan-Resiga R.; Tanasa C.; Bosioc A.I., "Device for reducing instabilities of swirl flow in conical diffuser of hydraulic turbines", patent application RO137523-A0, deposit date: 07.10.2022.
2. Susan-Resiga R., Bosioc A.I., Tanasa C., Stuparu A., Szakal R., "Equipment for reducing the instabilities in hydraulic turbines", patent application RO135938-A0, deposit date: 08.04.2022.
3. Muntean S., Susan-Resiga R., Bosioc A.I., Constantin S., Maxim D., Tănasă C., Vekas L., Borbath I., Anton L.E., "Echipament pentru reducerea efectelor cavitationale și uniformizarea curgerii la intrarea în turbopompe", Romanian Patent No. RO131578-B1/2017.
4. Susan-Resiga R., Muntean S., Tănasă C., Bosioc A.I., Ciocan T., Popescu C., "Echipament Pentru Controlul Instabilităților Curgerilor Cu Vârtej Din Difuzorul Conic Al Turbinelor Hidraulice", Romanian Patent No. RO131408-B1/2016.
5. Susan-Resiga R.F., Tanasa C., Bosioc A.I., Ciocan T., Stuparu A., Muntean S., "Metodă și echipament pentru controlul curgerilor cu rotație în conul tubului de aspirație al turbinelor hidraulice", titular: Universitatea Politehnica Timișoara, România, Romanian Patent No. RO130075-B1/2015.

Collaboration with other universities

1. HES-SO Valais/Wallis, School of Engineering, Switzerland

Published papers:

- "A dynamic approach for faster performance measurements on hydraulic turbomachinery model testing", 2018, Hasmatuchi V., **Bosioc A.I.**, Luisier S., Munch-Alligne C., Applied Sciences, vol. 8(9), p. 1426, <https://doi.org/10.3390/app8091426>.
- "On the Dynamic Measurements of Hydraulic Characteristics", Vlad Hasmatuchi, **Alin Bosioc**, Cécile Münch-Alligné, 2016, 28th IAHR Symposium on Hydraulic Machinery and Systems, Grenoble, France, published in IOP Conference Proceedings Series, vol. 49, p. 062001.
- "Dynamic Efficiency Measurements on Hydraulic Turbomachinery Model Testing: Examples of Implementation and Validation", 2016, Vlad Hasmatuchi, **Alin Bosioc**, Sébastien Luisier, Cécile Münch-Alligné, 11th International Conference on Hydraulic Efficiency Measurement (IGHM2016), Linz, Austria.

2. Chalmers University of Technology, Department of Applied Mechanics, Division of Fluid Dynamics, Gothenburg, Sweden.

Published papers:

- Swirling flow in a conical diffuser generated with rotor-stator interaction, 2016, Javadi A., **Bosioc A.I.**, Nilsson H., Muntean S., Susan-Resiga R., test case for ERCOFTAC Knowledge Base Wiki Article, <http://gnet-ercotac.cfms.org.uk/w/index.php/AC6-14>
- Experimental and Numerical Investigation of the Precessing Helical Vortex in a Conical Diffuser, with Rotor-Stator Interaction, 2016, Javadi A., **Bosioc A.I.**, Nilsson H., Muntean S., Susan-Resiga R., 2016, - ASME. J. Fluids Eng, 138(8), 081106, <http://fluidsengineering.asmedigitalcollection.asme.org/article.aspx?articleID=2516182>.
- Velocity and Pressure Fluctuations Induced by the Precessing Helical Vortex in a Conical Diffuser, 2014, Ardalan J., **Bosioc A.I.**, Nilson H., Muntean S., Susan-Resiga R.F., 27th IAHR Symposium on Hydraulic Machinery and Systems, Montreal, Canada, published in IOP Conf. Ser.: Earth Environ. Sci., vol. 22, p. 032009, [doi:10.1088/1755-1315/22/3/032009](https://doi.org/10.1088/1755-1315/22/3/032009).
- A Swirl Generator Case Study for OpenFoam, 2010, Petit O., **Bosioc A.I.**, Nilsson H., Muntean S., Susan-Resiga R.F., Proceedings of the 25th IAHR Symposium on Hydraulic Machinery and Systems, Timisoara, Romania, published in IOP Conf. Ser.: Earth Environ. Sci., vol. 12, p. 012056, [doi:10.1088/1755-1315/12/1/012056](https://doi.org/10.1088/1755-1315/12/1/012056), 2010.