

PERSONAL INFORMATION



Ana Pavlovic

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Sex: Female

Date of birth: 12/04/1981

Nationality: Italian and Serbian

Married: Yes

Children: Yes

Present positions

Research Fellow at the Interdepartmental Centre for Industrial Research in Advanced Mechanical Engineering Applications and Materials Technology (CIRI MAM) of University of Bologna

Contract professor at the Department of Industrial Engineering, School of Engineering and Architecture, Cesena.

Ambassador of Science to Serbia in Italy.

Field of the research

My prominent fields of investigation involve and have involved, both basic and applied level, the most advanced issues related to the use of numerical computation in solving structural design and industrial design problems, especially in the presence of composite materials. The use of the Finite Element Method, in the context of implicit and explicit calculation and of meshless methods, aimed at modelling complex aspects of a structural, fluid and multi-physics nature are some of the relevant investigations performed in the last years. In particular linear and non-linear static analyses, contact problems, non-linear constitutive laws of the material (plasticity, viscoelasticity, etc.) and large displacements, study of natural vibration frequencies, dynamic response study for variable loads in time and frequency.

Specifically, the research themes deal with: *Theoretical and experimental study of the mechanical behavior of composite materials; Design and development of criteria for the design of mechanical composite components; Theoretical and experimental study of the mechanical behavior of bio-composites and their application in the industrial world; Application of composite and bio-composite materials in the industrial, construction; Application of ceramic materials and their use in industry; new methods of measurement, process and product sustainability.*

This research activity has been always characterized by a strong collaboration with the industrial and university reality, both Italian and international.

Web Page: <https://www.unibo.it/sitoweb/ana.pavlovic>

EDUCATION

1996-2000	Maturity: Classical Maturity, at <i>Prva Kragujevacka Gimnazija</i> of Kragujevac, Serbia, with a 5/5 rating.
2000-2005	Degree: In Mechanical Engineering on 19 October 2005 with a score of 9,6/10 Department of Applied Mechanics, Faculty of Engineering, University of Kragujevac, Serbia Title of the thesis: Strength analysis of safety cage. The work of the thesis has been published in an international journal.
2007-2011	PhD: in Engineering of Materials on May 2011 University of Bologna, Department of Civil, Chemical, Environmental and Materials Engineering (DICAM). Thesis entitled: Methodology for validation of reliability and safety of industrial system and products. The work of the thesis has been published in an international journal.
2012-2014	Post PhD in Construction Techniques University of Bologna - Department of Civil, Chemical, Environmental and Materials Engineering (DICAM) Title: Performance-based analysis of slender panel structures

RESEARCH GRANT

02/09/2019	University of Bologna – Department of Industrial Engineering (DIN) - Interdepartmental Center for Industrial Research Mechanical Engineering and Materials Technology (CIRI MAM)
01/09/2022	Title of the grant RTD A: "Design of composite structures through advanced use of finite element models"
01/01/2019	Fund for Science, Republic of Serbia
31/12/2019	Ambassador of Science to Serbia in Italy

01/07/2017	University of Bologna - (CIRI MAM)
15/12/2018	Title of the grant: "Development of advanced solutions for optimizing the dynamics of processing plants with a view to reducing the energy consumption and the environmental impact"
01/07/2016	University of Bologna - (CIRI MAM)
30/06/2017	Title of the grant: "Process innovation for the sustainable ceramic tile supply chain"
01/01/2014	University of Bologna - Department of Industrial Engineering (DIN)
31/12/2014	Title of the grant: "Hydro-elastic slamming of composite structures"
01/01/2011	University of Bologna - Department of Engineering for the Mechanical, Nuclear, Aeronautical and Metallurgy Constriction (DIEM)
31/12/2011	Title of the grant: "Integrated methodologies and technologies for the design, construction and development of a new generation of advanced instrumental assets"
01/09/2006	University of Bologna - Department of Engineering for the Mechanical, Nuclear, Aeronautical and Metallurgy Constriction (DIEM)
31/08/2007	Title of the grant: "Evaluation methodology for the reliability and safety of industrial systems and products"

COLLABORATION WITH INDUSTRY

2017-2018	Trelleborg http://www.trelleborg.com/en Validation of Full Rubber by Quasi Static Structural Simulation
2016-2017	CDR Italy http://www.cdritaly.com Dynamic Analysis of the components
2016	MDue http://www.mdue.it Static Structural and Dynamic Analysis of the components
2016	NIER Engineering srl http://www.niering.it Validation of Static Structural, Modal and Seismic simulations provided by SPC for the Ex-vessel components of the ITER Electron Cyclotron Upper Launcher
2013-2014	Aurea Servizi S.A.A. , Pesaro (http://www.aureaservizi.com/it/) Environmental friendly resins - design and simulation of components made of composite material
2013-2014	Studio Pedrini Srl , Bologna (http://www.studiopedrini.it) Packaging machine - design and simulation of components made of composite materials
2012	SCM Group , Via Emilia 70, Rimini (www.scmgroup.com) Design optimization of CNC machines for woodworking
2012	Robopac – Aetna Group , Villa Verucchio (Rimini) Dynamic numerical simulation of the rotational parts
2009-2010	FOMET, Tazzari Group , Imola Dynamic explicit analysis: using numerical crash tests for safety improvements in the TAZZARI ZERO microcar.
2006-2008	Magneti Marelli , Via Timavo 33, Bologna (www.magnetimarelli.com) Research on the gears for automatic clutch; Research on the gears for automatic clutch

LANGUAGE SKILLS

Mother tongue(s)	Other language(s)	UNDERSTANDING		SPEAKING		WRITING
		Listening	Reading	Spoken interaction	Spoken production	
	Italian	C1	C1	C1	C1	C1
	English	B2	B2	B2	B2	B2
	Croatian/Bosnian/Montenegrin	C2	C2	C2	C2	C2
	Macedonian/Slovenian	B2	B2	B1	B1	B1
	German	A1	A1	A1	A1	A1

TEACHING ACTIVITIES

Teaching activities in the period from 2006 till now are concentrated at the University of Bologna - Department of Industrial Engineering (DIN) and Department of Civil, Chemical, Environmental and Materials Engineering (DICAM) and industrial sector. Courses:

1. Machine design (2008-2020, 2018-2020)
2. Laboratory of finite element structural analysis LM (2014-2020)
3. Product Engineering (2009-2013)
4. Use of modeling and simulation tools for industrial engineering problem solution (PhD course) (2015-2016)
5. Laboratory of Design in SolidEdge, ProE and CATIA (2007-2010)
6. Reliability and safety (2006-2007)

EU PROJECTS PARTICIPATION AND COORDINATION

2019-2021	SCIENTIFIC AND TECHNOLOGICAL COOPERATION BETWEEN THE ITALIAN REPUBLIC AND THE REPUBLIC OF SERBIA Two seats for a Solar Car Partnership: Italy and Serbia
2016-2019	ERASMUS PLUS - LikeHome Partnership: Spain (LP), Greece, Belgium, Italy, Germany, Sweden, Austria

- 2016-2018 **Por FESER - Innovazione di processo PER la filiera della piastrella CERamica sostenibile – IPERCER**
Partnership: Centro Ceramico, CIRI MAM, CIRI EC, NIER, ISTE
Por FESER - ONDA SOLARE: a vehicle that comes from the future. From the idea to the prototype in less than 24 months
Partnership: CRIF, CIRI MAM, CIRI AEREO, CINECA
- 2012-2016 **European project, IPA CBC Adriatic, “ADRIA HUB”**
Partnership: Italy, Serbia, Montenegro, Croatia, Bosnia/ Local coordination, External Expert
- 2012-2016 **Empowering Young Explorers E Y E**
Partnership: Holland, Italy, UK, Spain, Serbia, Austria, France / Staff of the EU project
- 2012-2014 **European project TEMPUS, “DIAUSS”**
Partnership: Universities of Kragujevac, Nis, Novi Sad, Novi Pazar, University of Bologna, Polytechnic of Torino, University of Kosice, University of Latvia etc.
- 2012-2014 **MISE-ICE-CRUI, project ROBOTRAINING**
Partners: University of Bologna, GMG company
- 2012-2013 **Italian Ministry of Environment, project “DeUrbisVento”**
Partners: University of Bologna, WIND energy, CEPA
- 2011-2013 **Regional Socio-Economic Development Program 2, EU, “ATC Serbia”**
Partnership: UniBO, Polytechnic School Kragujevac, ZASTAV, FIAT, Chamber of Commerce Kragujevac, University of Kragujevac
- 2011-2012 **European project EUREAC, “MANUNET”**
New materials and technology for improvement of cutting marble
- 2010-2012 **MISE-ICE-CRUI, Project Alma@Service**
Partnership: UniBO, University of Kragujevac, Serbia, Federal University of Niteroi, Brazil, KTH Stockholm, Sweden, CRA Cranefield, GB
- 2011-2012 **Regional program PRRIIT, “Development of aluminium frame”**
Location: University of Bologna, DICAM
- 2008-2011 **European Project FP7 – SeRViCe “Strength Railway Vehicles Centre of Faculty of Mechanical Engineering”**
Partnership: Faculty of Mechanical Engineering Kraljevo, Serbia, University of Bologna, KTH Stockholm, Sweden
- 2008-2010 **European project TEMPUS, “ECDL”**
Partnership: Faculty of Mechanical Engineering Kragujevac, University of Bologna etc.
- 2007-2010 **European project TEMPUS, “Multidisciplinary Studies in Mechanical Engineering”**
Partnership: University of Belgrade, Serbia, University of Bologna, Italy, University of Braunschweig, University of Erlangen, Germany

PUBLICATION JOURNALS AND PROCEEDINGS

Assistant professor, at the Department of industrial engineering - DIN, University of Bologna. Carried out the research in the field of finite element methods applied on solid mechanics. In particular, the latest activities have been oriented towards the application of the FEM in structures realized in composite and other innovative materials.

I published more than 100 scientific articles from which 78 are classified in SCOPUS, with H-Index 15 and with more than 600 citation. More than 25 technical publications in most prestigious Italian journals for design. Organized and participated at more than 40 national and international conferences. Some of the most curious articles:

1. Ana Pavlovic, Davide Sintoni, Giangiacomo Minak and Cristiano Fragassa, On the Modal Behaviour of Ultralight Composite Sandwich Automotive Panels, Composite Structures, 248 (2020) 112523, <https://doi.org/10.1016/j.compstruct.2020.112523>.
2. Ana Pavlovic, Davide Sintoni, Cristiano Fragassa and Giangiacomo Minak, Multi - Objective Design Optimization of the Reinforced Composite Roof in a Solar Vehicle, Applied Science, 2020, 10, 2665; doi:10.3390/app10082665.
3. Cristiano Fragassa, Marko Topalovic, Ana Pavlovic, Sneza Vulovic, Dealing with the Effect of Air in Fluid Structure Interaction by Coupled SPH-FEM Methods, (2019) Materials, 12, 1162; doi:10.3390/ma12071162
4. Fragassa, C., Vannucchi de Camargo, F., Pavlovic, A., Minak, G. Explicit numerical modeling assessment of basalt reinforced composites for low-velocity impact, (2019) Composites Part B: Engineering, 163, pp. 522-535.
5. Minak, G., Brugo, T.M., Fragassa, C., Pavlovic, A., De Camargo, F.V., Zavatta, N. Structural design and manufacturing of a cruiser class solar vehicle, (2019) Journal of Visualized Experiments, 2019 (143), art. no. e58525.
6. Pavlovic, A., Fragassa, C. Investigating the resistance of reinforced barriers to high velocity projectiles, (2018) Engineering Structures, 174, pp. 384-395.
7. Lukic, L., Djapic, M., Fragassa, C., Pavlovic, A. Optimization Model for Machining Processes Design in Flexible Manufacturing Systems, (2018) Journal of Advanced Manufacturing Systems, 17 (2), pp. 137-153.
8. Fragassa, C., Pavlovic, A., Santulli, C. Mechanical and impact characterization of flax and basalt fibre vinylester composites and their hybrids, (2018) Composites Part B: Engineering, 137, pp. 247-259.
9. Živković, I., Fragassa, C., Pavlović, A., Brugo, T. Influence of moisture absorption on the impact properties of flax, basalt and hybrid flax/basalt fiber reinforced green composites, (2017) Composites Part B: Engineering, 111, pp. 148-164.
10. Pavlovic, A., Fragassa, C. Numerical modelling of ballistic impacts on flexible protection curtains used as safety protection in woodworking, (2017) Proceedings of the Institution of Mechanical Engineers, Part C: Journal of Mechanical Engineering Science, 231 (1), pp. 44-58.
11. Pavlovic, A., Fragassa, C., Disic, A., Comparative numerical and experimental study of projectile impact on reinforced concrete, (2017) Composites Part B: Engineering, 108, pp. 122-130.
12. Djapic, M., Lukic, L., Fragassa, C., Pavlovic, A., Petrovic, A. Multi-agent team for engineering: a machining plan in intelligent manufacturing systems, (2017) International Journal of Machining and Machinability of Materials, 19 (6), pp. 505-521.
13. Fragassa, C., Giorgini, L., Pavlovic, A., Zattini, G. Acid aging effects on surfaces of PTFE gaskets investigated by thermal analysis, (2016) Tribology in Industry, 38 (4), pp. 435-444.

Place: Bologna
Date: 20.06.2020

Signature
[Ana Pavlovic]

