

PERSONAL INFORMATION

Ana Pavlovic

 Via A. e P. Lorenzetti 6, Bologna, 40133, Italy

 +39 346 3232510

 ana.pavlovic@unibo.it

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

Gender: Female **Date of birth:** 12/04/1981

Nationality: Italian and Serbian

Married: Yes **Children:** Yes

PRESENT POSITIONS

- National scientific qualification for the Associate Professor; Competition sector 09/A3 - Industrial design, mechanical constructions and Metallurgy 06/07/2020 - 06/07/2029 (art.16, paragraph 1, law 240/10)
- Research Fellow (RTD-A) at the Interdepartmental Centre for Industrial Research in Advanced Mechanical Engineering Applications and Materials Technology (CIRI MAM), University of Bologna
- Contract Professor at the Department of Industrial Engineering, School of Engineering and Architecture, Cesena, University of Bologna
- 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 application 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 most 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 have been aspects under consideration during my activity.
- 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 ceramic materials and their use in industry; New methods of measurement, process and product sustainability.* Furthermore, this research activity has been always characterized by a strict collaboration with the industrial reality, both Italian and international.

Useful contents: [Google Scholar](#) ; [Research Gate](#) ; [Academia](#)

EDUCATION

1996-2000 **Maturity: Classical Maturity, at Prva Kragujevacka Gimnazija of Kragujevac, Serbia**

2000-2005 **Degree:** In Mechanical Engineering on October 19th, 2005

Department of Applied Mechanics, Faculty of Engineering, University of Kragujevac, Serbia

Strength analysis of safety cage; *Safety cage represent one of the most important part of equipment in sport cars. It has to be made in the way to absorb kinetic energy and on that way reduce contusion of driver. Geometrical and material nonlinear analysis was done using software PAK. Using displacement control method was possible to get critical forces for structure. Those results gave necessary safety factor and strength, and acceptable results were obtained using material with better properties.*

2007-2011 **PhD:** in Engineering of Materials on May 25th, 2011

University of Bologna, Department of Civil, Chemical, Environmental and Materials Engineering

Methodology for validation of reliability and safety of industrial system and products; *Experimental tests are a fundamental practice for improving the reliability and the functionality of mass- oriented products. Essential information on the modern approach for design/process validation using experimental testing were provided. Only joining theoretical knowledge, simulation analysis and experimental results, it is possible to obtain a complete, fundamental information for further researches and manufacturing. Accelerated life tests and software for simulation can be extremely useful to interpret reliability of the product, to allow shorter testing procedures and a fast way for removing mistakes that are noticed in basic experimental diagnostic.*

2012-2014

Post PhD in Construction Techniques

University of Bologna - Department of Civil, Chemical, Environmental and Materials Engineering

Performance-based analysis of slender panel structures; *Two-dimensional panel structures are lightly used in the engineering field such as the diffusion of thin section profiles in various sectors of engineering, to the stiffened panels mainly used in the aeronautical field for the construction of fuselage parts, to the box structures. Providing an answer to the analysis and design needs of this structural typology has represented a significant application interest for the industrial world.*

RESEARCH FELLOWSHIPS

After my degree in Mechanical Engineering, my research was oriented to the use of numerical methods in solving mechanical structural and design problems. All research fellowships were given to me by University of Bologna and its different departments such as: Department of Industrial Engineering (DIN); Interdepartmental Centre for Industrial Research Mechanical Engineering and Materials Technology (CIRI MAM); Department of Civil, Chemical, Environmental and Materials Engineering (DICAM).

- 02/09/2019
01/09/2022 **Design of composite structures through advanced use of finite element models.** *The most advanced issues relating to the use of numerical calculation in the resolution of the design problems characteristic of structural and industrial engineering are being addressed by using composite materials. The use of finite element method (FEM) is expected, in the context of implicit and explicit calculation aimed at modelling complex aspects of a structural, fluid and Multiphysics nature (RTDA)*
- 01/07/2016
15/12/2018 **Development of advanced solutions for optimizing the dynamics of processing plants with a view to reducing the energy consumption and the environmental impact.** *Research was dedicated to structural development of different types of treatment plants (e.g. sanders, shearing machines) used in the final stages of the production process of ceramic tiles of exceptional dimensions (over 2x3 meters). In particular, this study has made it possible to redesign significant sections of said systems (e.g. frame, bases, support structures, tilting beams) starting from the simulation of static loads (weights, balances), dynamic loads (inertial forces) and impulsive loads (impacts) expected during operation as well as during handling phases.*
- 01/01/2014
31/12/2014 **Hydro-elastic slamming of composite structures.** *Development and subsequent experimental validation of numerical models for the study of the effects of hydro-elastic slamming on thin structures in composite material (mainly reinforced with fiberglass, carbon and natural fibers). These models also made it possible to support the redesign phase of a boat hull.*
- 02/01/2012
01/01/2014 **Performance-based analysis of lean panel structures.** *The aim of the research was to create a theoretical operational framework for the analysis of two-dimensional panel structures. These structural types are lightly used in the engineering field such as the diffusion of thin section profiles in various sectors of engineering, to the stiffened panels mainly used in the aeronautical field for the construction of fuselage parts, to the box structures. Providing an answer to the analysis and design needs of this structural typology has represented a significant application interest for the industrial world.*
- 01/01/2011
31/12/2011 **Integrated methodologies and technologies for the design, construction, and development of a new generation of advanced instrumental assets.** *Realization of dynamic analysis: ways of vibrating, resonance and frequency response of an automatic machine, dynamics of the rotating rings: static, dynamic tensions and proper pulsations. FEM modeling of dynamic problems: modal analysis, rigid and flexible dynamic analysis and simulation of a work cycle. Redesign by the use of innovative materials (e.g. hybrid composites).*
- 01/09/2006
31/08/2007 **Evaluation methodology for the reliability and safety of industrial systems and products.** *Study of the structural response in static and dynamic terms of machining centers (CNC plants for processing wood, composites, and other light materials). The behavior of some work plants was simulated during normal operating conditions and in the most common incidents in order to verify the structural behavior of its parts when some design parameters change.*

RESEARCH CONTRACTS

Since 2007, I was also contractually involved in additional research activity, addressed to solve applied problems in industrial engineering:

- Use of non-linear numerical modelling techniques on high anisotropy materials for automotive applications. Use of advanced simulation techniques through the commitment of Finite Elements in the development and optimization of the design and construction solutions necessary to transform the current multi-seater solar vehicle into a two-seater solar road vehicle through structural analysis for weight reduction, dynamic analysis, crash test analysis. (250h in 2 months)
- Application of the FEM method on mechanical structures and assemblies. Solid / shell modelling for model preparation. Application of different innovative materials and different mathematical models. (600 hours in 6 months)
- The state of the art of composite materials at the service of rail transport. The state of the art of design techniques in rail transport using composite materials. State of the art of simulation techniques for the use of composite materials in rail transport. Description of rail transport components suitable for use with composite materials. Conceptual design and finite element verification of rail transport systems / components suitable for connection with composite materials. (600 hours in 6 months)
- Methodology for assessing the reliability and safety of industrial systems and products. (800 hours in 10 months)
- Study and test of advanced materials with advanced functions for applications of industrial interest. (800 hours in 7 months)

UNIVERSITY TEACHING ACTIVITY

My teaching activities were primarily performed at the School of Engineering at University of Bologna, Degree in Mechanical Engineering at Campus of Bologna and Forlì and at the University of Modena and Reggio Emilia.

[A.A. 2019/20] **LM Machine Building (Module2) [3CFU]**

[A.A. 2014/15; 2016/17; 2017/18; 2018/19; 2019/20; 2020/21] **Finite Element Structural Calculation Laboratory LM [3 CFU x 5]**

[A.A. 2019/20] **Design and optimization of end-of-line production plants** (University Master in Ceramic Technology)

[A.A. 2015/16] **Use of modeling and simulation tools to solve engineering problems (XXXI Cycle of PhD Course) [150h]**

[A.A. 2009/10; 2010/11; 2011/12] **Product engineering [6CFU x 3]**

[A.A. 2007/08; 2008/09; 2009/10] **Machine Elements L [6CFU x 3]**

[A.A. 2019/2020] **Member of the Exam Commission for the Degree in Mechanical Engineering**

INVITED LECTURES

Title: Parallel computing for crash simulations: the case of a minicar.

International Workshop on HPC Methods for Engineering Application, Post-processing and optimization. CINECA [20.06.2017, Milan, Italy]

Title: Numerical Simulation for Investigating the Contact Problems in Industrial Life.

International Mini-symposium of Contact Mechanics: Theory and Applications

Mathematical Institute of the Serbian Academy of Science and Arts (SASA), [14.03.2017, Belgrade, Serbia]

Title: Sustainable mobility solutions.

Workshop The solar future is already here! (conductor Patrizio Roversi)

European Researchers' Night, [25.09.2015, Bologna, Italy]

Title: Industrial application of Finite Element Methods.

Polytechnic School Kragujevac, [20.04.2013, Kragujevac, Serbia]

Title: Application of Finite Element Methods in the railway industry.

Faculty of Mechanical Engineering Kraljevo, University of Kragujevac, [25.05.2010, Kragujevac, Serbia]

VISITING RESEARCHER

Institution: Faculty of Mechanical and Civil Engineering of Kraljevo, University of Kragujevac, Serbia

[06/11/2008 to 12/11/2009]

Framework: SeRViCe - Strength Railway Vehicles Center of Faculty of Mechanical Engineering [EU FP7 RegPot Project]

Participants: Kragujevac Unit, Serbia (Coordinator), Bologna Unit, KTH Stockholm (Sweden) and others.

Role: Scientific and international strengthening of the research group; numerical design and simulation activities

Institution: Department of Industrial Engineering (ex DIEM), University of Bologna

[27/03/2012 to 26/06/2013]

Framework: DIAUSS - Development and improvement of automotive and urban engineering studies in Serbia [EU Tempus]

Participants: 16 partners from Serbia, Italy (U. Bologna, Polytechnic Turin, FIAT), Lithuania, Slovakia

Role: Technical-scientific support to the project, coordination of international mobility (320 hours)

COMPUTER TRAININGS AND SKILLS

Excellent knowledge in numerical implicit and explicit simulations using software: **ANSYS WB and ANSYS ACP** for geometry modelling, structural static analysis, modal analysis, linear and on linear buckling analysis, thermal, transient and explicit dynamic analysis.

Excellent knowledge in numerical explicit simulations such as crash test, impact analysis using software: **LS DYNA**

Good knowledge in numerical simulations using software's: **FEMAP, NASTARN PAK, FLUENT, CFD, CFX**

Good knowledge in design using CAD/CAM software's: **CATIA, Pro E, Solid Edge, Mechanical DeskTop, AutoCAD, Inventor**

Excellent knowledge of **Microsoft Office™ tools, Internet Explorer, Windows XP, MAC**

2017	Seminar on Composite Manufacturing Simulation Solution" organized by ESI Group
2015	Karalit CFD (3 days course); ModeFrontier (5 days course); OpenFoam for CFD application (3 days course)
2014	LET's 2014 Messenger (http://www.lets2014.eu/newsmedia/messengers/)
2013	Spinner Consortium: <i>Enrolled in the financing for innovation projects; Enrolled in the European design</i>
2012	Ansys CFD Summer School
2003	Practical Application of Finite Element Methods in PAK software DAAD Summer School – Dynamic of fluids

COLLABORATION WITH INDUSTRY

Different responsibilities of applied researches were entrusted to me by private institutions:

Aetna Group Spa (http://www.robopac.com/IT/)	<i>Material selection and design. Structural design and optimization of rotational parts by the use of dynamic numerical simulation.</i>
Aurea Servizi SAA (http://www.aureaservizi.com/it/)	<i>Environmentally friendly resins - Design and simulation of components made of composite materials, including hybridization of fibers and low-emission resins.</i>
CDR Italy Srl (http://www.cdritaly.com)	<i>Analysis of the industrial components (as wheels) respect to static and dynamic loads. Structural parts' design and optimization. (including a patent on an innovative polymer wheels fork)</i>
Magneti Marelli Spa (www.magnetimarelli.com)	<i>Design validation of metal and polymer gears for automatic clutch. FEM analysis of components and mechanisms. Evaluation of the effect of tolerances.</i>
MDue Spa (http://www.mdue.it)	<i>Static Structural and Dynamic Analysis of the industrial components respect to safety conditions in the case of high-speed impacts.</i>
NIER Engineering Srl (http://www.niering.it)	<i>Validation of Static Structural and Modal behaviour of the Ex-vessel components of the ITER Electron Cyclotron Upper Launcher by FEM simulations</i>
SCM Group Spa (www.scmgroup.com)	<i>Structural design optimization of CNC machines for woodworking Investigating the dynamic impact of projectiles on flexible barriers by numerical simulation.</i>
Studio Pedrini Srl (http://www.studiopedrini.it)	<i>Design and simulation of components made of composite materials in the case of packaging machines. Material choice and engineering of packaging machines by the use of composites</i>
Tazzari Group Spa (https://www.tazzari-zero.com)	<i>Dynamic explicit analysis for safety design and validation: using numerical techniques for crash tests simulation and safety improvements in the case of ZERO microcar.</i>
Trelleborg AB (http://www.trelleborg.com/en)	<i>Validation of Full Rubber components and parts by Quasi Static Structural Simulations</i>

INTERNATIONAL PROJECTS PARTECIPATION AND COORDINATION

- [1] **ATC Serbia: Automotive Training Centre** [EU RSEDP2; 2011-13]
 Scope: Strengthening of the didactic infrastructures located in Central Serbia and their redirection towards the strategic sector of automotive engineering thanks to the creation of a network of 3 didactic laboratories at 3 different engineering faculties, as well as the realization of courses for specialist training of researchers, technicians and students with an involvement of about 1,500 people in 2 years. The project involved the technical-financial support of important companies in the sector such as: FIAT Group and Zastava Group.
 Role: International Coordinator; 'Training of Trainers' Course Coordination; Transfer of Technology to Industry; Teaching Activity; Research Activity on Reliability Methods and Tools; Numerical simulations.
- [2] **ADRIA HUB: Bridge technical differences and social suspicions contributing to transform the Adriatic area in a stable hub for a sustainable technological development** [IPA CBC Adriatic; 2012-2015]
 Scope: creation of a collaboration network between universities, companies and other institutional bodies with the aim of scientific and technological strengthening of the Adriatic area through a common action of scientific research, industrial innovation and knowledge transfer.
 Role: National Coordinator; Pilot projects coordination; Actions Development for a long-term sustainability; Transfer of Technology to Industry; Teaching Activity; Research Activity on Design Methods and Tools; Numerical simulations.
- [3] **IMPuls: Innovation Management for new Products** [EU RSEDP2; 2011-13]
 Scope: Increasing the capacity of rapid prototyping laboratories for the promotion and continuing education in the field of digital technologies for product development; stimulating innovation and increases the competitiveness of the economy and its environment promoting and applying digital technologies for new product development.
 Role: Main Investigator for the use of FEM methods and tools in the design and optimization of industrial parts.
- [4] **DIAUSS: Development & Improvement of Automotive and Urban Engineering Studies** [EU Tempus JEP; 2012-14]
 Scope: Development of study curricula with a strong interdisciplinary and international value as a support to the automotive industry and to the social growth of urban areas. In particular, the project involving 17 international partners is aimed at establishing and / or strengthening the first and second level university courses of various universities in the Balkans, improving their system integration both with the industrial world and with high schools .
 Role: Support to the National Coordinator, 'Training of Trainers' Course, Invited Professor, Teaching Activity; Research Activity on Vehicle Design and Multidisciplinary in Design.

NATIONAL PROJECTS

- [1] **Two seats for a Solar Car** [MAECI, Strategic Projects; 2019-2021]
 Scope: Conceptual, functional and construction vehicle redesign aimed at transforming a 4-seat solar prototype, developed for racing, into a more conventional car, able to be conventionally register. Car construction and on road test.
 Role: Use of advanced simulation techniques through the commitment of Finite Elements in the development and optimization of the design and construction solutions necessary to transform the current multi-seater solar vehicle into a two-seater solar road vehicle through structural analysis for weight reduction, dynamic analysis, crash test analysis.
- [2] **Onda Solare: a vehicle that comes from the future. From the idea to the prototype in less than 24 months** [Por FESER, 2016-2018]
 Scope: Conceptual, functional and constructive design of a solar electric vehicle for race
 Role: Application of the FEM method on mechanical structures and assemblies. Solid / shell modeling for model preparation. Application of different innovative materials and different mathematical models.
- [3] **IPERCER: Process innovation FOR the sustainable ceramic tile supply chain** [Por FESER, 2016-2018]
 Scope: Optimize and make efficient the production cycle of large porcelain stoneware slabs by studying process and modeling solutions for the entire large format supply chain through an integrated approach that also makes use of experimental measurements in the field. The efficiency of the ceramic production cycle wants to be achieved both in technological terms (improvement of compaction, firing, measuring methods, etc.) and in energy terms (reduction of consumption) through a validation with industrial partners in the sector
 Role: Structural development of different types of treatment plants used in the final stages of the production process of ceramic tiles of exceptional dimensions.
- [4] **RoboTraining - Progettando e Costruendo un Esoscheletro Innovativo** [Accordo MISE-ICE-CRUI; 2012-2014]
 Scope: Development of a new concept of sports and rehabilitation equipment capable of supporting combinations of movements generated by the human body, even complex ones, proposed as an innovative solution for gyms and hospitals. Servo-assisted joints, rapid prototyping of shapes, virtual design and aesthetics, FEM simulation of kinematic mechanisms, composite materials, hybrid joints, sensing encoders, active control devices, experimental calibration of the intensity of the efforts are just some of the disciplinary areas were the aspects essentials of technological research. The international collaboration saw the participation of 3 universities, 2 research centers, 1 high school.
 Role: design studio with development of alternative aesthetic models; state of the art on innovative materials in the intervention sector; production of composite specimens and characterization of materials; creation of parts in composite, biocomposite and aluminum; development of construction processes; complete executive project in terms of technical realization.
- [5] **DeUrbisVento - Utilizzo duale di impianto microeolico in ambito urbano** [Min. Ambiente; 2012-2013]
 Scope: Development of energy generation design solutions in urban areas with wind farms with combined energy recovery functions. In particular, the aim was to combine energy production with an air extraction system for passive cooling.
 Role: the implementation and consequent diffusion of wind energy generation systems and techniques in urban areas; design of wind micro-turbines and their use combined with a hot air extraction system; state of the art of wind and micro wind in Italy; design of the pilot plant which saw the creation of the 3D model of the vertical axis turbine, as well as the use of static and dynamic simulation to verify the functionality of some of its main structural components.
- [6] **Alma@Service - Materiali compositi al servizio del trasporto ferroviario** [Accordo MISE-ICE-CRUI; 2010-2012]
 Scope: Evaluation of the technical-industrial potential related to the replacement of metallic materials with non-traditional materials, such as GFRP, in the design of freight wagons. In particular, the project provided for the experimental determination and theoretical modeling of the influence of environmental effects on fatigue life and on the residual resistance of GFRP specimens produced in an autoclave. Functional models have been produced to demonstrate the applicability of the production technologies of these composite materials in the field of rail freight.
 Role: Technical-economic feasibility study of GFRP applications for freight wagons; potential in terms of diversification of the types of wagons of the introduction of new technological processes; mechanical characterization of materials; theoretical-numerical modeling of material behavior and damage; writing of finite element codes (FEM) containing the developed models; structural calculation by FEM.

SCIENTIFIC EVENT ORGANIZATION

- 2017 Symposium on 'Contact Mechanics: Theory and Applications', Mathematical Institute of SASA, March 14th, Belgrade, Serbia
- 2016 15th Youth Symposium on Experimental Solid Mechanics, June 8th -11th, Rimini Italy
- 2015 Exhibition Comer: '*Onda Solare – The future is here!*'. Researcher's Night, 25th September, Bologna, Italy
- 2015 *FEM modeling of Structures in Reinforced Sheet with Femap, Bologna, Italy*
 Workshop on '*Soft Skills and their role in employability, new perspectives in teaching, assessment and certification*', Bertinoro, Italy
 Public Exhibition: '*Sole in piazza: Onda Solare, a solar vehicle for the future*'. Bologna, Italy
- 2014 43rd **AIAS National Conference**, September 9th -13th, Rimini, Italy
- 2008 1st Symposium on Multidisciplinary Studies of Design in Mechanical Engineering, Bertinoro, Italy
- 2007 6th Youth Symposium on Experimental Solid Mechanics, May 9th -12th, Vrnjacka Banja, Serbia
- 2004 5th Int. Scientific Conference Research and Development of Mechanical Elements and Systems, Sept. 16th -17th, Kragujevac, Serbia

CONFERENCE PARTECIPATION

- 2019 9th Int. Scientific Conference Research and Development of Mechanical Elements and Systems, Sept. 5th -7th, Kragujevac, Serbia
 Quality festival Conference, May 29th to June 1st, Kragujevac, Serbia
 16th International Conference on Tribology, May 15th -17th, Kragujevac, Serbia

- 2018 International CAE Conference, October 8th -9th, Vicenza, Italy
 46^o National Conference AIAS, Villa San Giovanni, September 5th – 8th Calabria, Italy
 International Conference of Contemporary materials, September 2nd - 3rd, Banja Luka, B&H
- 2017 16th International Conference on Fracture and Damage Mechanics, July 18th - 20th Florence, Italy
 Nano Innovation 2017, Conference & Exhibition, September 26th -29th, Rome, Italy
 4th South-East European Conference on Computational Mechanics, July 3rd – 5th Kragujevac, Serbia
 15th International Conference on Tribology, May 17th -19th, Kragujevac, Serbia
- 2016 15th Youth Symposium on Experimental Solid Mechanics, Jun 8th– 11th, Rimini, Italy
 IX International Scientific Conference Contemporary Materials 2016, September 4th -5th Banja Luka, B&H
 45^o National Conference AIAS, University of Trieste, 7th-10th September 2016, Trieste, Italy
 10th International Conference ICQME, September 28th -30th, Petrovac, Montenegro
- 2015 8th International Congress of Croatian Society of Mechanics, September 29th – October 2nd, Opatia, Croatia
 5th International Conference on Innovative Natural Fiber Composites for Industrial Applications, October 15th -16th, Rome, Italy
 44^o National Conference AIAS, University of Messina, September 2nd -5th, Messina, Italy
 8th international conference Contemporary Materials 2015, September 6th -7th, Banja Luka, B&H
 DEMI Conference, May 29th -30th, Banja Luka, B&H
- 2014 International Congress Motor Vehicles & Motors 2014, Kragujevac, Serbia
 International LET's 2014 Conference, Bologna, Italy
 43^o National Conference AIAS, September 9th -12th, Rimini, Italy
 8th International Quality Conference, May 23rd, Kragujevac, Serbia
 VIII International Conference "Heavy Machinery-HM 2014", Jun 25th -28th, Zlatibor, Serbia
- 2013 ICCE 21, July 2013, Tenerife, Spain
 DAS2013, September 25th -28th, Primosten, Croatia
 International CAE Conference and Exhibition, Verona, Italy
- 2012 29th Danubia Adria Symposium, September 26th -29th, Belgrade. Serbia
- 2010 The 14th AMME-14 Conference, May 25th -27th, Cairo, Egypt
 Week of Innovative Regions in Europe (WIRE2010), March 15th -17th, Granada, Spain
- 2009 19th International Scientific Conference, TRANSPORT 2009, Sofia, Bulgaria
 8th Youth Symposium on Experimental Solid Mechanics, May 20th -23rd, Gyor, Hungary
- 2008 1st Symposium on Multidisciplinary Studies of Design in Mechanical Engineering, Jun 26th -28th, Bertinoro, Italy
 7th Youth Symposium on Experimental Solid Mechanics-YSESM, May 14th -17th, Wojcieszycze, Poland
- 2007 6th Youth Symposium on Experimental Solid Mechanics-YSESM, May 9th -12th, Vrnjacka Banja, Serbia
- 2006 22nd Danubia Adria Symposium DAS, September 22nd -25th, Zilina, Slovaks
 5th Youth Symposium on Experimental Solid Mechanics - YSESM, May 10th -13th, Puchov, Slovakia
 5th International Scientific Conference Heavy Machinery - HM'05, Jun 28th – July 3rd, Kraljevo, Serbia
- 2005 4th Youth Symposium on Experimental Solid Mechanics - YSESM, May 4th -7th, Castrocaro Terme, Italy
- 2004 3rd Youth Symposium on Experimental Solid Mechanics - YSESM, May 12th -15th, Porreta Terme, Italy

AWARDS AND RECOGNITIONS

Scientific Ambassador

Institution: **Scientific Fund, Republic of Serbia**

Recognition: Scientific Ambassador to Italy of the Scientific Fund of Serbia

[01.01.2019 - to date]

Scientific Expert

Institution: **Ministry of Education, University and Research (MIUR)**

Recognition: Expert registered for the Peer-Reviewers for the Italian scientific evaluation (REPRISE)

[10.09.2019 - to date]

Project Evaluator

Institutions: Innovation Fund Serbia; Innovation Fund Serbia (over 30 projects evaluated)

ADEKO Recognition

Institution: **International Association of Design, Elements and Construction (ADEKO)**

Recognition: for *Improving the quality of Design Construction*, assigned on 01.09.2019

AIAS Software Simulation Award 2017

Institution: **Italian Scientific Society of Mechanical Design and Machine Construction (AIAS)**

Recognition: for the best numerical investigation for the work '*Numerical study of the impact at low speed on biocomposites*', assigned on 07.09.2017

Best Student + Best Degree Thesis

Institution: **Faculty of Engineering, University of Kragujevac, Serbia**

Recognition: 1st Prize for best student + best thesis in engineering, 2005.

Best Student + International Scholarship

Institution: **Embassy of Norway**

Recognition: 1st Prize for best student of the A.A. 2002/2003 + International scholarship

Best Student + International Scholarship

Institution: **DAAD German Academic Exchange Service** (representing the most relevant German organization for international academic cooperation)

Recognition: 1st Prize for best student of the a.a. 2001/2002 + International scholarship

PATENTS

Patent no.: 102020000013711 Date: 09/06/2020

Title: Fastening device with security release function, made by additive manufacture

Authors: Cristiano Fragassa, Giangiacomo Minak, Ana Pavlovic, Asti Radovani

Topic: The present invention relates to a fixing device with safety release function, made by means of additive manufacturing. More specifically, the present invention relates to a fastening device for functional components of means of transport, buildings, and the like, which can be easily and quickly unlocked in case of need. The patent was sold to the University of Bologna which proceeds to its commercial exploitation within its 'Third Mission' policy.

Patent no.: PS102019000005408 Date: 09/04/2019

Title: "Polymer Joint for Mechanical Suspension of Light Ground Vehicles"

Authors: Minak G, Fragassa C, Brugo T. M., Peghetti D., Pavlovic A., Baschetti G.

Topic: Industrial Invention Patent with the aim of protecting, as a technical discovery, the use of Dyneema® tapes as connection parts for suspensions and structural parts in light vehicles (e.g. motorcycles, tricycles and quadricycles), as well as the related technology that has led to develop specific fixing solutions and appropriate precautions to eliminate the problem of viscoelastic deformation of the material. Thanks to this invention, standard solutions have been replaced, such as spherical plain bearings, with a saving in terms of weight of the order of 50%, but also with various other advantages, especially in terms of dimensions, functionality and maintenance. The patent was donated to the University of Bologna which proceeds to its commercial exploitation within its 'Third Mission' policy.

Patent number: 102016000110680 Date: 03/11/2016

Title: "Composite wheel support for electrical transformer"

Authors: Pietro Baracco, Ana Pavlovic

Topic: Industrial Invention Patent with the aim of protecting an innovative wheel support consisting of a fork made of composite material and comprising a portion: upper configured to be connectable to an electrical transformer; two vertical positions connected monolithically to the upper portion each comprising a surface configured to rotatably contain and support a roller and in particular its pin; herein said vertical portions comprise a plurality of ribs oriented from the bottom upwards. The patent was sold and become part of the strategic IRP asset of CDR Italy Srl.

PUBLICATIONS

In line with my prominent research fields, the over 100 contributions, between scientific and conference papers, are mainly related to the use of the numerical methods (FEM and SPH) in the design and optimization of structures, especially in the presence of quite uncommon materials (as natural/hybrid composites, rapid prototyping resins, not-uniformly reinforced concretes, post-treated ceramics). I have investigated the behaviour of these materials, as constituents of mechanical structures or industrial products, in a large range of different conditions (as static and dynamic loads, impacts, wear and so on). With this scope, part of papers refers to the experimental characterization of materials and components.

SCIENTIFIC JOURNALS

SCOPUS		
N. of articles	h-Index	N. of citation
78	15	643

REVIEWER BOARD MEMBER

- [1] Composite Structures (Elsevier)
- [2] Composite Part B (Elsevier)
- [3] Applied Science (MDPI)
- [4] Materials (MDPI)
- [5] Computer Modeling in Engineering & Sciences
- [6] Manufacturing Letters
- [7] AIMS Material Science
- [8] Journal of Advanced Manufacturing Systems
- [9] Science and Engineering of Composite Materials
- [10] FME Transactions
- [11] Journal of Applied and Computational Mechanics
- [12] Arabian Journal for Science and Engineering
- [13] Facta Universitatis – Mechanical Engineering, University of Nis, Serbia

GUEST EDITOR

Special Issue on 'Experimental and Numerical Investigation of Composite Materials'. **Materials**; MDPI. (ISSN 1996-1944)
01/07/2019 - in progress

ACADEMIC NETWORK

Country	Professor	Faculty/Department	University
Serbia	M. Zivkovic, R. Slavkovic, N. Filipovic, M. Stefanovic, S.Mitrovic	Faculty of Engineering	Kragujevac
	N. Nedic, D. Prsic	Faculty of Engineering	Kraljevo
	B. Rauso, M. Ognjanovic	Faculty of Mechanical Engineering	Belgrade
	M Lukovic, K. Krsmanovic	Faculty of Apply Arts	Arts in Belgrade
Argentina	Anibal Cofone	Industrial Engineering	Buenos Aires
United Kingdom	R. Vignjevic	Department of Aerospace, Mechanical and Structural Engineering	Brunel London
	N. Djordjevic		
	M.Fotouhi	University of Glasgow	Glasgow
Montenegro	I. Talabasic	Loughborough University London	London
	Z. Krivokapic	Faculty of Mechanical and Marine Engineering	Montenegro
D. Nikolic	Kotor		
Croatia	R. Zigulic	Faculty of Engineering	Rijeka
	S. Braut		
Brazil	C. Bergmann	Department of Materials Engineering	Rio Grande do Sul
Slovenia	T. Rodic	Department for materials and metallurgy	Ljubljana
USA	M. Di Piero	School of computing, Data Analysis, High Performance and Scientific Computing	De Paul, Chicago,
Germany	Dragan Marinkovic	University of Berlin	Berlin

Place: Bologna
Date: 10.10.2020

Signature
[Ana Pavlovic]

