

PERSONAL INFORMATION

Name and surname	Igor Saveljic
Date and place of birth	1983, Kragujevac
Scientific title	Scientific associate
E-mail	isaveljic@kg.ac.rs
Educational-scientific / educational-artistic field	Technical science, Phd
University, Faculty, Organizational unit	University of Kragujevac, Institute for information Technology
Research field and areas	Mechanical Engineering, Bioengineering

EDUCATION

BACHELOR

Year	2009
Place	Kragujevac
Institution	Faculty of Mechanical Engineering

MASTER STUDIES

Year	/
Place	/
Institution	/

DOCTORAL DISSERTATION

Year	2016
Place	Kragujevac
Institution	Faculty of Engineering in Kragujevac
Title of doctoral dissertation	Numerical solving of relationship between true and false lumen in acute aortic dissection
Scientific title	Scientific associate
Research area	Applied Mechanics and Computer Engineering

PROFESSIONAL BIOGRAPHY – ELECTION IN RESEARCH OR SCIENTIFIC TITLE

Date	Institution	Scientific title
2010	BioIRC - Bioengineering Research and Development Center	Research Associate
2015	Faculty of Engineering University of Kragujevac	Research Associate
2018	Faculty of Engineering University of Kragujevac	Scientific Associate

PROFESSIONAL BIOGRAPHY - TRAINING

Year	Institution	Duration
2012	ARTreat Workshop, Athens, Greece	5 days
2014	SCOPES Workshop, Fribourg, Switzerland	4 days
2015	SCOPES Workshop, Fribourg, Switzerland	4 days

ENGAGEMENT IN THE FORMATION OF SCIENTIFIC PERSONNEL

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PARTICIPATION IN NATIONAL PROJECTS FINANCED BY MINISTRY OF EDUCATION/MINISTRY OF SCIENCE AND TECHNOLOGICAL DEVELOPMENT/SCIENCE FUND OF THE REPUBLIC OF SERBIA:

1. ON-174028: Multiscale Methods and Their Application in Nanomedicine, financed by Ministry of Science and Technology of Republic of Serbia, 2011-2014. Principal investigator - prof. dr Miloš Kojić
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PARTICIPATION IN INTERNATIONAL PROJECTS

1. FP7- ICT IP-224297-ARTreat (09/01/08-08/31/11), Multi-level patient-specific artery and atherogenesis model for outcome
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prediction, decision support treatment, and virtual hand-on training.

2. SIFEM, Semantic Infostructure interlinking an open source Finite Element tool and libraries with a model repository for the multi-scale Modeling and 3d visualization of the inner-ear, 01.02.2013 – 31.01.2016. <http://www.sifem-project.eu/7>
3. EMBalance, A Decision Support System incorporating a validated patient-specific, multi scale Balance Hypermodel towards early diagnostic Evaluation and efficient Management plan formulation of Balance Disorders, FP7-ICT-2013-5-2-610454, Bioengineering research and development center BIOIRC, Kragujevac, Serbia 2013 – 2016
4. SMARTool: Simulation Modeling of coronary ARtery disease: a tool for clinical decision support, (01/01/16-30/06/19), H2020-PHC-2015-single-stage. Role: Researcher

MEMBERSHIP IN SCIENTIFIC AND PROFESSIONAL ASSOCIATIONS

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ORGANIZATION OF NATIONAL/INTERNATIONAL SCIENTIFIC MEETINGS (CONFERENCES, CONGRESSES...)

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LIST OF SCIENTIFIC PAPERS:

Monographs, anthologies	Monographic studies,	Thematic	Sum
			4
1.	Nenad Filipovic, Zarko Milosevic, Igor Saveljic, Dalibor Nikolic, Milos Radovic, Computer Modeling of Stent Deployment in the Coronary Artery Coupled with Plaque Progression. In: Zivic F., Affatato S., Trajanovic M., Schnabelrauch M., Grujovic N., Choy		

K. (eds) Biomaterials in Clinical Practice, Springer, Cham, (2018). doi.org/10.1007/978-3-319-68025-5_25 2. Igor B. Saveljic, Nenad Filipovic (2020) Aortic Dissection: Numerical Modeling, Virtual Surgery. In: Computational Modeling in Bioengineering and Bioinformatics, Academic Press pp 137-178, ISBN: 978-0-128-19583-3, https://doi.org/10.1016/C2017-0-03417-1 3. Saveljic, I. B. and Filipovic, N. D. (2021). Parametric Modeling of Blood Flow and Wall Interaction in Aortic Dissection. In Computational Modeling and Simulation Examples in Bioengineering, N. D. Filipovic (Ed.), Doi: https://doi.org/10.1002/9781119563983.ch5 4. Igor Saveljic, Nenad Filipovic, Chapter 4 - ECG simulation of cardiac hypertrophic condition, Editor(s): Nenad Filipovic, Cardiovascular and Respiratory Bioengineering, Academic Press, 2022, Pages 67-99, ISBN 9780128239568, Doi: https://doi.org/10.1016/B978-0-12-823956-8.00006-7	
Papers published in scientific journals of international scientific importance	Sum 14
1. Nenad Filipovic, Dalibor Nikolic, Igor Saveljic, Zarko Milosevic, Themis Exarchos, Gualtiero Pelosi and Oberdan Parodi, Computer simulation of three dimensional plaque formation and progression in the coronary artery, Computers and Fluids, Vol. 88, pp. 826-833. 2013, doi: http://dx.doi.org/10.1016/j.compfluid.2013.07.006. 2. Nenad Filipovic, Tijana Djukic, Igor Saveljic, Petar Milenkovic, Gordana Jovicic, Marija Djuric, Modeling of liver metastatic disease with applied drug therapy, Computer Methods and Programs in Biomedicine, May 01, 2014, http://dx.doi.org/10.1016/j.cmpb.2014.04.013 3. G Pelosi, D Panetta, F Vozzi, F Viglione, N Filipovic , I Savelijc, T Exharcos, MG Trivella and O Parodi, Site-specific shear stress-plaque severity relations by high axial resolution coronary profiling in an animal model of atherogenesis, Cardiovascular Research, July 15, 2014 103 (2), doi: 10.1093/cvr/cvu091.148	

4. Aleksa Janovic, Petar Milovanovic, Igor Saveljic, Dalibor Nikolic, Michael Hahn, Zoran Rakocevic, Nenad Filipovic, Michael Amling, Bjoern Busse, Marija Djuric, Microstructural properties of the mid-facial bones in relation to the distribution of occlusal loading, *Bone*, August 2014, <http://dx.doi.org/10.1016/j.bone.2014.07.032>
5. Svetlana Antic, Arso M. Vukicevic, Marko Milasinovic, Igor Saveljic, Gordana Jovicic, Nenad Filipovic, Zoran Rakocevic, Marija Djuric, (2015) Impact of the lower third molar presence and position on the fragility of mandibular angle and condyle: A Three-dimensional finite element study, *Journal of Cranio-Maxillofacial Surgery*, Vol. 43, No. 6, pp 870-878, <http://dx.doi.org/10.1016/j.jcms.2015.03.025>
6. Brönnimann D, Djukic T, Triet R, Dellenbach C, Saveljic I, Rieger M, Rohr S, Filipovic N, Djonov V, (2016) Pharmacological Modulation of Hemodynamics in Adult Zebrafish In Vivo. *PLoS ONE* 11(3): e0150948. doi:10.1371/journal.pone.0150948
7. Djukic TR, Karthik S, Saveljic I, Djonov V and Filipovic N (2016) Modeling the Behavior of Red Blood Cells within the Caudal Vein Plexus of Zebrafish. *Front. Physiol.* 7:455. doi: 10.3389/fphys.2016.00455
8. Filipovic Nenad, Saveljic Igor, Rac Vladislav, Beatriz Olalde Graellsd, Bijelic Goran, Computational and experimental model of transdermal iontophoretic drug delivery system, *International Journal of Pharmaceutics*, 2017, DOI: <http://dx.doi.org/10.1016/j.ijpharm.2017.05.066>
9. Pajic SS, Antic S, Vukicevic AM, Djordjevic N, Jovicic G, Savic Z, Saveljic I, Janović A, Pesic Z, Djuric M and Filipovic N (2017) Trauma of the Frontal Region Is Influenced by the Volume of Frontal Sinuses. A Finite Element Study. *Front. Physiol.* 8:493. doi: 10.3389/fphys.2017.00493
10. Koullapis P Kassinos SC Muela J Perez-Segarra C Rigola J Lehmkuhl O Cui Y Sommerfeld M Elcner J Jicha M Saveljic Igor Filipovic Nenad D Lizal F Nicolaou L (2018) Regional aerosol deposition in the human airways: The SimInhale

benchmark case and a critical assessment of in silico methods, European journal of pharmaceutical sciences, vol. 113, pp. 77-94 11. Tijana Djukic, Igor Saveljic, Gualtiero Pelosi, Oberdan Parodi, Nenad Filipovic (2019) Numerical simulation of stent deployment within patient-specific artery and its validation against clinical data, Computer Methods and Programs in Biomedicine, Volume 175, pp. 121-127, https://doi.org/10.1016/j.cmpb.2019.04.005 12. Djukic, T., Saveljic, I. & Filipovic, Numerical modeling of the motion of otoconia particles in the patient-specific semicircular canal, Comp. Part. Mech. (2019) vol 6(4): 767-780, https://doi.org/10.1007/s40571-019-00260-1 13. Filipovic, N., Saveljic, I., Hamada, K. et al. Abrupt Deterioration of COVID-19 Patients and Spreading of SARS COV-2 Virions in the Lungs. Ann Biomed Eng 48, 2705–2706 (2020). https://doi.org/10.1007/s10439-020-02676-w 14. Tijana Djukic, Igor Saveljic, Gualtiero Pelosi, Oberdan Parodi, Nenad Filipovic, A study on the accuracy and efficiency of the improved numerical model for stent implantation using clinical data, Computer Methods and Programs in Biomedicine, Volume 207, 2021, 106196, ISSN 0169-2607, https://doi.org/10.1016/j.cmpb.2021.106196	
Proceedings of international scientific conferences	Sum 16
1. Igor Saveljić, Dalibor Nikolić, Tijana Djukić, Nenad Filipović, Numerical model of the bio moleculural parameters transfer through the coronary artery wall, 7th international congress of Serbian Society of Mechanics 24-26 June 2019, Sremski Karlovci, Serbia 2. Dalibor Nikolić, Igor Saveljić, Nenad Filipović, Combining numerical methods and parametric optimization of stent design, 7th international congress of Serbian Society of Mechanics 24-26 June 2019, Sremski Karlovci, Serbia 3. Smiljana M. Djorović, Igor B. Saveljić, Nenad D. Filipović, Computational modelling of carotid artery and simulation of	

plaque progression, 7th international congress of Serbian Society of Mechanics 24-26 June 2019, Sremski Karlovci, Serbia

4. I. Saveljić, S. M. Saveljić and N. Filipović, "Numerical analysis of vibration effects on the lumbar spine," 2021 20th International Symposium INFOTEH-JAHORINA (INFOTEH), East Sarajevo, Bosnia and Herzegovina, 2021, pp. 1-4, doi: 10.1109/INFOTEH51037.2021.9400660.
5. Igor Saveljic, Slavica Macuzic Saveljic, Nenad Filipovic, Influence of Random Vibration on Semicircular Canals During Exposure to Whole Body Vibrations, International Conference on Medical and Biological Engineering CMBEBIH 2021, April 21–24, 2021, Mostar, Bosnia and Herzegovina, https://doi.org/10.1007/978-3-030-73909-6_89
6. Igor Saveljić, Tijana Đukić, Dalibor Nikolić, Smiljana Đorović and Nenad Filipović, Numerical Simulation of Fractional Flow Reserve in Atherosclerotic Coronary Arteries, 21st IEEE International Conference on BioInformatics and BioEngineering, Kragujevac, Serbia, October 25-27, 2021, ISBN 978-86-81037-69-0
7. Vladimir Simić, Miljan Milošević, Igor Saveljić, Bogdan Milićević, Nenad Filipović and Miloš Kojić, 3D Reconstruction and Computational Modeling of Solid-fluid Interaction in RealisticHeart Model, 21st IEEE International Conference on BioInformatics and BioEngineering, Kragujevac, Serbia, October 25-27, 2021, ISBN 978-86-81037-69-0
8. Dalibor Nikolić, Dragan Sekulić, Danko Milašinović, Dragana Paunović, Igor Sekulić, Igor Saveljić and Nenad Filipović, Hemodynamics of Femoro-Popliteal "Bi-Pass" Surgery using FEA Methods, 21st IEEE International Conference on BioInformatics and BioEngineering, Kragujevac, Serbia, October 25-27, 2021, ISBN 978-86-81037-69-0
9. Smiljana Tomašević, Igor Saveljić, Lazar Velicki and Nenad Filipović, Computational Finite Element Analysis of Aortic Root with Bicuspid Valve, 21st IEEE International Conference on BioInformatics and BioEngineering, Kragujevac, Serbia, October 25-27, 2021, ISBN 978-86-81037-69-0

10.	Nikolić D., Saveljić I., Filipović N., In vitro and in silico testing of stent device, The 8th International Congress of the Serbian Society of Mechanics Kragujevac, Serbia, June 28-30, 2021, ISBN 978-86-909973-8-1
11.	Milovanović A., Saveljić I., Jovanikić O., Filipović N., Numerical analysis of blood flow through the cerebral aneurysm, The 8th International Congress of the Serbian Society of Mechanics Kragujevac, Serbia, June 28-30, 2021, ISBN 978-86-909973-8-1
12.	Saveljić I., Mačužić Saveljić S., Nikolić D., Đukić T., Đorović S., Lukić J., Filipović N., Numerical modeling the motion of otoconia particles in the semicircular canal under whole body vibration, The 8th International Congress of the Serbian Society of Mechanics Kragujevac, Serbia, June 28-30, 2021, ISBN 978-86-909973-8-1
13.	I. Saveljic, S. Macuzic Saveljic, D. Nikolic, N. Filipovic, Numerical analysis of human spine during whole body vibration, 1st International Conference on Chemo and Bioinformatics, October 26-27, 2021. Kragujevac, Serbia, ISBN 978-86-82172-01-7, pp. 109-112.
14.	T. Djukic, I. Saveljic, N. Filipovic, Addition of remeshing technique to the stent implantation software and its effect on the simulation outcome, 1st International Conference on Chemo and Bioinformatics, October 26-27, 2021. Kragujevac, Serbia, ISBN 978-86-82172-01-7, pp. 267-270.
15.	I. Saveljic, S. Macuzic Saveljic, B. Arsic and N. Filipovic, Recurrent neural networks for prediction seat-to-head transfer functions, 1st Serbian International Conference on Applied Artificial Intelligence (SICAAI) Kragujevac, Serbia, May 19-20, 2022.
16.	Igor Saveljic, Slavica Macuzic Saveljic, Nenad Filipovic, Numerical analysis of covid-19 virus transmission in a vehicle, 1th International Conference „Conference on advances in science and technology“, Coast 2022, May 26-29, 2022 Herceg Novi, Montenegro.
Proceedings of national scientific conferences	
Sum	

Monographs of national importance	Sum
Scientific papers in national journals	Sum 9
1. I.Saveljic, M.Milosevic, Upravljanje nelinearnih procesa putem modifikovanog PID zakona upravljanja, Tehnika - Masinstvo, 2008, vol. 57, br. 2, str. 7- 13. ISSN: 0461-2531. 2. N. Filipovic, M.Rosic, V. Isailovic, Z. Milosevic, D. Nikolic, D. Milasinovic, M. Radovic, B. Stojanovic, M. Ivanovic, I. Tanaskovic, I. Saveljic, M. Milosevic, D. Petrovic, M. Obradovic, E. Themis, A. Sakellarios, P. Siogkas, P. Marraccini, F. Vozzi, N. Meunier, Z. Teng, D. Fotiadis, O. Parodi, M. Kojic: ARTREAT project: computer, experimental and clinical analysis of threedimensional plaque formation and progression in arteries; Journal of the Serbian Society for Computational Mechanics, Vol. 5 No. 2, 129-146, UDC: 616.13-004:004.925.84., ISSN 1820-6530, COBISS.SR-ID 145567756, 2011. 3. N. Filipovic, M. Radovic,V. Isailovic, Z. Milosevic, D. Nikolic, I. Saveljic, M. Milosevic, D. Petrovic, M. Obradovic, D. Krsmanovic, E. Themis, A. Sakellarios, P. Siogkas, P. Marraccini, F. Vozzi, N. Meunier, Z. Teng, D. Fotiadis, O. Parodi, M. Kojic, Plaque formation and stent deployment with heating thermal effects in arteries, Journal of the Serbian Society for Computational Mechanics, Vol. 6, No. 1, pp 11-28, 2012. 4. Z. Milosevic, M. Radovic, Z. Teng, J. Bird, M. Obradovic, I. Saveljic, S. Savic , N. Filipovic, Plaque Progression Modeling by Using Hemodynamic Simulation and Histological Data, 2012, Journal of the Serbian Society for Computational Mechanics, Vol. 6, No. 2, pp. 122-132, 2012. 5. M. Nikolic, V. Isailovic, D. Nikolic, I. Saveljic, Z. Milosevic, M. Radovic, S. Semmelbauer, F. Bohnke and N. Filipovic, Mechanical and electro-mechanical box cochlea model, Journal	

of the Serbian Society for Computational Mechanics, Vol. 8 No. 2, UDC: 532.542:519.71, 2014. 6. D. Bubanja, A. Djukic, A. Jurisic-Skevin, V. Grbovic, I. Saveljic, T. Exarchos and N.Filipovic, Static and dynamic measurement and computer simulation of diabetic mellitus foot biomechanics, Journal of the Serbian Society for Computational Mechanics, Vol. 8 No. 2, UDC: 617.586:612.76, 2014 7. Djorovic, S., Saveljic, I., Filipovic, N.: Computational simulation of carotid artery: from patient-specific images to finite element analysis. J. Serb. Soc. Comput. Mech. 13(1), 120–129 (2019) 8. S Mačužić, I Saveljić, Three dimensional analyses of seat belt and driver in case of sudden braking, Mobility & Vehicle Mechanics, 45(2), 2019, 45-53, Doi: 10.24874/mvm.2019.45.02.04. 9. Slavica Mačužić Saveljić, Igor Saveljić, Nenad Filipović, Effect of vibration on semicircular canal during whole body vibration, Mobility & Vehicle Mechanics, Vol. 48, No. 1, (2022), pp 47-54.	
Technical solutions	Sum
Patents	Sum

CITATION OF SCIENTIFIC PAPERS

According to the Scopus database, the total number of citations is 268. According to the same database, the h-index (Hirsch index) is 9.

BRIEF DESCRIPTION OF RESEARCH IN THE PREVIOUS PERIOD

Development of three-dimensional models for solving the problem of blood flow through small and large blood vessels using the finite element method.

BRIEF DESCRIPTION OF PLANNED RESEARCH IN THE NEXT PERIOD

Application of numerical methods in order to model blood flow in blood vessels of the head and blood vessels of the heart.