Revised on October 05, 2022.

Dr. Nikola Korunovic, assistant professor

University of Nis, Faculty of Mechanical Engineering

Head of Laboratory for Intelligent Manufacturing Systems

CAREER SUMMARY

Dr Nikola Korunovic, associate professor at Mechanical Engineering Faculty, University of Nis, Serbia, has 25 years of research experience in finite element analysis (FEA), structural optimization and computer-aided design (CAD). His current research interests are biomechanics, tire design, and optimization of medical implants and various complex products. He is currently the Head of Laboratory for Intelligent Production Systems (LIPS) at Faculty Mechanical Engineering in Nis. Nikola also has great experience in research and consultancy for industry, related to implementation and customization of FEA and CAD systems. He has been involved in many national projects supported by Serbian government and industry as well as in FP6, FP7, HORIZON 2020, TEMPUS and ERASMUS projects, where he also gained experience in managing, administrative and financial aspects.

Nikola is engaged as a lecturer at a number of university courses, which cover application of finite element method, computer-aided design, basics of biomedical engineering, analysis and simulation in biomedical engineering and CNC systems (BSc, MSc and PhD degrees). He also has extensive experience in teaching of grown-ups, as he has worked at PRISMA project - resettlement of army officers leaving military service. He is the author of more than 90 scientific and professional papers.

PROFESIONAL CAREER AND EDUCATION

From year 2020. Nikola works as an associate professor at the Department of Manufacturing Engineering, Faculty of Mechanical Engineering, University of Niš, Serbia. He was employed at the same department from 2015. to 2020. as an assistant professor and from 1999. to 2015. as teaching and research assistant. In 2011. Nikola defended PhD dissertation “Finite element analysis of a rolling tyre” and in 2003. MS thesis: “Analysis Of Pneumatic Tyre Behavior Using Static Finite Element Analysis”, all at the same faculty, where he also earned BS degree in 1995.

SELECTED PROJECTS

1. "Virtual human osteoarticular system and its application in preclinical and clinical practice - III41017", Interdisciplinary project financed by Serbian Ministry of science. (2011.-2022.)
2. “Passenger car tire design simulation and optimization by means of finite element analysis“, investitor/partner: Intire institute Moscow. (2012.)
3. RoboShepherd - automated animal husbandry and grazing system. The Innovation Fund of the Republic of Serbia. Consortium leader: Coming - Computer Engineering d.o.o. (2019-2021)
4. "Dynamic analysis of vibrotransporter using FEM", investitor/partner: ATB FOD d.o.o, Bor.
5. “Computer Aided Tire Development”, financed my Ministry of science, No. TR000231. (2001.-2005.)
6. Development of Serbian Network of Mobility Centers (SER-MORE) - FP7 No. MOB7-GNR-2008-225076. (2008.-2011.)

SELECTED PAPERS

1. Korunović, N., Stojković, M., Mišić, D., Pavlović, A., & Trajanović, M. (2021). Tyre Design and Optimization by Dedicated CAD Tyre Model. Tehnički vjesnik, 28(5), 1701-1710.
2. Korunović, N., Banić, M., Trifunović, M., & Pavlović, A. (2021). Bergström-boyce vs. Hyperelastic rubber models in structural analysis of tires. Facta Universitatis, Series: Mechanical Engineering, 19(4), 767-779., (https://doi.org/10.22190/FUME191124002K)
3. Korunovic, N., Marinkovic, D., Trajanovic, M., Zehn, M., Mitkovic, M., & Affatato, S. (2019). In Silico Optimization of Femoral Fixator Position and Configuration by Parametric CAD Model. Materials, 12(14), 2326. M22, https://doi.org/10.3390/ma12142326
4. Korunović, N., Fragassa, C., Marinković, D., Vitković, N., & Trajanović, M. (2019). Performance evaluation of cord material models applied to structural analysis of tires. Composite Structures, 224, 111006. M21, https://doi.org/10.1016/j.compstruct.2019.111006
5. Korunović, N., Stojković, M., Milovanović, J., Vitković, N., Trifunović, M., Manić, M., & Trajanović, M. (2016). Bioengineering and tire design related research at LIPS laboratory: A summary of results. Journal of Serbian Society for Computational Mechanics, 10(1), 71-101.
6. Trajanović, M., Korunović, N., Milovanović, J., Vitković, N., Mitković, M. (2010). Application of computer models of Mitković selfdynabizable internal fixator in rehabilitation of femur traumas. Facta universitatis, Series: Mechanical Engineering, 8(1), 27-38.
7. Korunović, N., Trajanović, M., Stojković, M. (2008). Finite Element Model for Steady-State Rolling Tire Analysis. Journal of Serbian Society for Computational Mechanics, 2 (1), 63-79.