FORM 3

TEACHING-SCIENTIFIC COUNCIL

Faculty of Engineering, Kragujevac

and

COUNCIL FOR INTERDISCIPLINARY AND MULTIDISCIPLINARY FIELDS

UNIVERSITY OF KRAGUJEVAC

At the meeting of the Council **INTERDISCIPLINARY AND MULTIDISCIPLINARY FIELDS** of the University of Kragujevac held on 16.04.2024. (decision number: IV-07-273/7), we have been appointed as members of the Committee for the composition of the Evaluation report on the scientific topic validity of the doctoral dissertation entitled: "Multiscale Model for Thrombosis / Atherosclerotic Plaque Formation and Progression", and fulfilment of the candidate's **Lemana Spahić, PhD** and the proposed mentor's **Nenad Filipović, Prof. Dr.** requirements for the preparation of a doctoral dissertation.

Based on the data at our disposal, we submit the following:

EVALUATION REPORT
ON SCIENTIFIC TOPIC VALIDITY AND
FULFILLMENT OF THE CANDIDATE'S AND PROPOSED MENTOR'S REQUIREMENTS
FOR THE PREPARATION OF A DOCTORAL DISSERTATION

1. Information about a doctoral dissertation
1.1. Doctoral dissertation title:
Multiscale Model for Thrombosis / Atherosclerotic Plaque Formation and Progression
1.2. Scientific field of the doctoral dissertation:
Mechanical engineering and Medical sciences
1.3. Justification of the doctoral dissertation topic (up to 15000 characters): 1.3.1. Definition and description of the subject of research The subject of this doctoral dissertation is the development of a model for the progression of atherosclerotic plaque in peripheral arteries using sophisticated methods such as agent-based modeling (ABM) and finite element analysis (FEA). 1.3.2. Starting hypothesis • The basic hypotheses of the doctoral dissertation, based on the research objectives, the candidate's previous research activities, and the results of other authors in the field, consist of the following assumptions: • It is possible to create artificial neural networks for predicting the behavior of relevant parameters for plaque progression.

- It is possible to create an ABM model for modeling plaque progression and drug interaction delivered directly into the artery.
- It is possible to create an application for displaying a three-dimensional (3D) model of the peripheral artery and plaque.
- It is possible to integrate the proposed ABM model into an application programming interface (API) to predict real deformation, achieving realistic behavior of the artery and atherosclerotic plaque as a deformable body.

1.3.3. Work plan

The dissertation development plan is created based on past experiences, research activities, and analysis of existing scientific literature. The first step is a thorough literature review on ABM models, specifically ABM models for modeling atherosclerotic plaque progression. The second step involves establishing the methodology, which includes defining the data used, collecting and preparing the data set, and selecting an FEA solver to conduct simulations. The third step is generating the results themselves, using neural networks and analyzing them. Finally, the results will be discussed in the context of the current state in the field and the scientific research contribution of this dissertation.

1.3.4. Research methods

Modern scientific research methods will be used in the process of developing the doctoral dissertation. These methods include numerical and programming methods. Programming methods include developing artificial neural networks for predicting plaque behavior and ABM methods. ABM used to predict plaque progression in peripheral arteries represents an innovative approach in biomedical research, especially in the field of cardiovascular bioengineering. ABM allows the simulation of individual particle or cell behavior in the body, contributing to a more detailed understanding of the dynamics of atherosclerotic plaque growth and development. The numerical method used is the finite element method (FEM). This method has found wide application in engineering, particularly in bioengineering. The reason for the extensive use of FEM in this field is its ability to solve complex problems involving irregular geometry. As a result of numerical calculations obtained using this method, significant information is derived that can be useful to doctors in preoperative planning, thereby speeding up patient recovery. The advantage of FEM is the ability to create a large number of different cases to cover various boundary conditions. Neural networks will also be used as methods for processing results and optimizing parameters for predicting plaque growth.

1.3.5. Research objective

The main objective of this research is the development of an ABM model for modeling, simulating, and predicting plaque behavior in peripheral arteries.

1.3.6. Expected results

- A program/module based on the ABM method for simulating and modeling plaque growth.
- An artificial neural network for predicting parameters relevant to plaque progression.
- An ABM application integrated into an API for visualizing real deformations of a 3D model of the peripheral artery.

1.3.7. Draft content the doctoral dissertation with suggested literature to be used (up to 10 key literature sources)

- Introduction
- Theoretical Considerations of Different Methods Applied in the Dissertation
- Formulation of Artificial Neural Networks
- Formulation of the ABM Module for Modeling Plaque Progression
- Integration of Neural Network Models and ABM Module into API
- Results and Discussion
- Concluding Considerations
- References

1.4. Link to previous research in this field with mandatory citation of up to 10 relevant references:

- Corti A, Casarin S, Chiastra C, Colombo M, Migliavacca F, Garbey M. A multiscale model of atherosclerotic plaque development: toward a coupling between an agent-based model and CFD simulations. InComputational Science–ICCS 2019: 19th International Conference, Faro, Portugal, June 12–14, 2019, Proceedings, Part IV 19 2019 (pp. 410-423). Springer International Publishing.
- Corti A, Colombo M, Migliavacca F, Rodriguez Matas JF, Casarin S, Chiastra C. Multiscale computational modeling of vascular adaptation: a systems biology approach using agent-based models. Frontiers in bioengineering and biotechnology. 2021 Nov 2;9:744560.
- Corti A, Chiastra C, Colombo M, Garbey M, Migliavacca F, Casarin S. A fully coupled computational fluid dynamics–agent-based model of atherosclerotic plaque development: multiscale modeling framework and parameter sensitivity analysis. Computers in Biology and Medicine. 2020 Mar 1;118:103623.
- Corti A, Migliavacca F, Berceli SA, Chiastra C. Predicting 1-year in-stent restenosis in superficial femoral arteries through multiscale computational modelling. Journal of the Royal Society Interface. 2023 Apr 5;20(201):20220876.
- Filipovie N, Tomasevic S, Blagojevic A, Arsic B, Anic M, Djukic T. Modeling of Plaque Progression in the Carotid Artery Using Coupled Agent Based with Finite Element Method. In2022 IEEE-EMBS International Conference on Biomedical and Health Informatics (BHI) 2022 Sep 27 (pp. 1-4). IEEE.
- Corti A, Colombo M, Rozowsky JM, Casarin S, He Y, Carbonaro D, Migliavacca F, Rodriguez Matas JF, Berceli SA, Chiastra C. A predictive multiscale model of in-stent restenosis in femoral arteries: linking haemodynamics and gene expression with an agent-based model of cellular dynamics. Journal of the Royal Society Interface. 2022 Mar 30;19(188):20210871.
- Keshavarzian M, Meyer CA, Hayenga HN. Mechanobiological model of arterial growth and remodeling. Biomechanics and modeling in mechanobiology. 2018 Feb;17:87-101.

1.5. Evaluation of the scientific topic validity of the doctoral dissertation:

Based on the submitted topic for the doctoral dissertation, the Commission concludes that there is a need for the development of an agent-based model for the formation and progression of atherosclerotic plaque. This will enhance diagnostic capabilities concerning atherosclerosis as a disease. The doctoral dissertation is focused on the real issues of diagnosing and predicting the development of atherosclerosis, utilizing modern technologies that align with current advancements in the field.

The Commission concludes that the proposed topic for the doctoral dissertation, along with the outlined subject, objectives, scientific contributions, and expected results, based on prior independent research and a detailed analysis of available scientific papers, constitutes an original idea in both scientific and professional terms.

2. Information about the candidate

2.1. Name and surname of the candidate:

Lemana Spahić

2.2. Doctoral academic studies' study programme and year of enrolment:

Bioengineering, 2022

2.3. Candidate's biography (up to 1500 characters)

Lemana Spahić was born on September 30, 1996, in Žepče, Bosnia and Herzegovina, where she completed elementary school and high school as the valedictorian.

In the academic year 2015/2016, she enrolled in the Faculty of Engineering and Natural Sciences at the International Burch University in Sarajevo, Bosnia and Herzegovina, majoring in Genetics and Bioengineering. She completed her undergraduate studies in 2018 with an average grade of 10. Her final undergraduate thesis in Human Genetics was titled "Detection of Clonal Hematopoiesis in Peripheral Blood Smears of the General Population" and was defended with a grade of 10.

She began her master's studies in Genetics and Bioengineering in the academic year 2018/2019 at the Faculty of Engineering and Natural Sciences at the International Burch University in Sarajevo and graduated in 2020 with an average grade of 10. Her master's thesis in Advanced Bioinformatics was titled "Genetic Based Variability Between Autism Spectrum Disorder and Other Developmental Disorders" and was defended with a grade of 10.

She enrolled in doctoral academic studies (DAS) in the academic year 2020/2021 and completed them in January 2024 by defending her doctoral dissertation titled "Application of Artificial Intelligence in Ultrasound Imaging Classification of Infant Neurological Impairment Disorders," thereby earning the title of Doctor of Science.

She began her second DAS in the academic year 2022/2023 in the Bioengineering program at the Faculty of Engineering Sciences, University of Kragujevac. During this year, she successfully passed all the exams required by the curriculum. As part of her completed activities, she gathered literature and conducted simulations in the field of her doctoral dissertation topic, based on which papers were published.

2.4. Overview of the candidate's scientific research work (up to 1500 characters):

The candidate's previous scientific research work and interests are primarily focused on the field of bioengineering and the application of artificial intelligence in medicine. During her undergraduate and master's studies, she was sponsored by the Verification Laboratory "VERLAB," which specializes in the verification and inspection of medical device performance. In 2020, she became the head of the molecular diagnostics laboratory at "CH Labs Tuzla," and in 2021, an assistant in the scientific field of genetics and bioengineering at the International Burch University. In 2022, she was appointed as a Senior Research Associate at the VERLAB Institute for Biomedical Engineering, Medical Devices, and Artificial Intelligence. In November 2022, she was appointed as an Early Stage Researcher and employed at the BioIRC Institute for the DECODE project (Grant Agreement No 956470), funded by the European Commission.

During her scientific research career, the candidate has published over 60 works, including articles in indexed journals, conference proceedings, and book chapters.

Additionally, the candidate is involved in the work of Bosnian and international bioengineering societies, such as the "Society for Medical and Biological Engineering in Bosnia and Herzegovina," IEEE, and IEEE SA. She also currently serves as the class leader for young scientists at the International Academy of Sciences in Bosnia and Herzegovina.

2.5. The list of published scientific papers of the candidate from the scientific field related to the topic of the doctoral dissertation (authors, paper title, journal title, volume, year of publication, pages from-to, DOI number[1], category):

1. Imamović, E., Deumić, A., Kadrić, L., Spahić, L., Ramić, I., Badnjević, A., & Karabeg, R. (2020, June). Modelling and simulation of blood glucose dynamics. In 2020 9th Mediterranean Conference on Embedded Computing (MECO) (pp. 1-4). IEEE. M33
2. Šećkanović, A., Šehovac, M., Spahić, L., Ramić, I., Mamatnazarova, N., Pokvić, L. G., ... & Kacila, M. (2020, June). Review of artificial intelligence application in cardiology. In 2020 9th Mediterranean Conference on Embedded Computing (MECO) (pp. 1-5). IEEE. M33

[1] If the publication does not have a DOI number, enter the ISSN and ISBN

3. Džuho, A., Aleta, A., Pandža, S., Ramić, I., Mamatnazarov, N., & Spahić, L. (2020). Simulink model of oxygen distribution in skeletal muscle. In 2020 43rd International Convention on Information, Communication and Electronic Technology (MIPRO) (pp. 1720-1723). IEEE. M33
4. Hafizović, L., Čaušević, A., Deumić, A., Bećirović, L. S., Pokvić, L. G., & Badnjević, A. (2021, October). The Use of Artificial Intelligence in Diagnostic Medical Imaging: Systematic Literature Review. In 2021 IEEE 21st International Conference on Bioinformatics and Bioengineering (BIBE) (pp. 1-6). IEEE. M33
5. Silajdžić, A., Bećirović, L.S., Trkulja, A., Muharemović, A., Pokvić, L.G., Badnjević, A., Begić, E. A systematic review on wearable ECG devices and processing techniques for fall risk assessment, prevention and detection. In 2022 11th Mediterranean Conference on Embedded Computing (MECO). IEEE. M33
6. Mujkić, A, Baralić, E., Ombašić, A., Deumić, A., Bećirović, L.S., Pokvić, L.G., Badnjević, A., Machine Intelligence in Biomedical Data Modeling, Processing, and Analysis. In 2022 11th Mediterranean Conference on Embedded Computing (MECO). IEEE. 2022 11th Mediterranean Conference on Embedded Computing (MECO) (pp. 1-4). IEEE. M33
7. L. Spahić, L. Benolić, S. Ur-Rehman Qamar, B. V. Simić, Milićević, M. Milošević, T. Geroski, N. Filipović, Prediction of coronary plaque progression using data mining and artificial neural networks, 13th International Conference on Information Society and Technology ICIST 2023 (March, 2023). M33
8. L. Spahić, L. Benolić, S. Ur-Rehman Qamar, B. V. Simić, Milićević, M. Milošević, N. Filipović, Coupled Modeling of Drug-Coated Balloon Treatment of Peripheral Artery Disease 28th Congress of the European Society of Biomechanics ESB 2023 (July, 2023) M33
9. L. Spahić, L. Benolić, S. Ur-Rehman Qamar, B. V. Simić, Milićević, M. Milošević, T. Geroski, N. Filipović, Improving the accuracy of peripheral artery plaque progression models with Artificial Intelligence, X International Conference on Computational Bioengineering ICCB 2023 (September, 2023) M33
10. L. Spahić, A. Softić, A. Durak-Nalbantić, E. Begić, B. Stanetić, H. Vranić, Integrating Machine Learning in Clinical Decision Support for Heart Failure Diagnosis: case study, Joint conference of the Mediterranean Conference on Medical and Biological Engineering and Computing (MEDICON) and the International Conference on Medical and Biological Engineering in Bosnia and Herzegovina (CMBEBIH) (September, 2023) M33
11. F. Hrvat, L. Spahić, A. Aleta, Heart disease prediction using logistic regression machine learning model, Joint conference of the Mediterranean Conference on Medical and Biological Engineering and Computing (MEDICON) and the International Conference on Medical and Biological Engineering in Bosnia and Herzegovina (CMBEBIH) (September, 2023) M33

Papers in scientific journals:

1. Kovačević, Ž., Gurbeta Pokvić, L., Spahić, L., & Badnjević, A. (2020). Prediction of medical device performance using machine learning techniques: infant incubator case study. Health and Technology, 10(1), 151-155. M24
2. Badnjević, A., Pokvić, L. G., Deumić, A., & Bećirović, L. S. (2022). Post-market surveillance of medical devices: A review. Technology and Health Care, 1-15. M23
3. Badnjević, A., Spahić, L., Jordamović, N. B., & Pokvić, L. G. (2022). A novel method for conformity assessment testing of infant incubators for post-market surveillance purposes. Technology and Health Care, 1-11. M23
4. Qamar, S. U. R., Spahić, L., Benolić, L., Zivanovic, M., & Filipović, N. (2023). Treatment of Peripheral Artery Disease Using Injectable Biomaterials and Drug-Coated Balloons: Safety and Efficacy Perspective. Pharmaceutics, 15(7), 181 M21
5. Badnjević, A., Pokvić, L. G., Smajlhodžić-Deljo, M., Spahić, L., Bego, T., Meseldžić, N., Bedak, O. (2023). Application of artificial intelligence for the classification of the clinical

outcome and therapy in patients with viral infections: The case of COVID-19. Technology and Health Care, 1-12. M23
2.6. Assessment of the candidate's fulfilment of requirements according to the study programme, faculty's general act and university's general act (up to 1000 characters):
Upon reviewing the biography, bibliography, and previous scientific research work of the candidate, Lemana Spahić, Ph.D. in the field of Genetics and Bioengineering, the committee concludes that the candidate meets all the requirements for candidacy as prescribed by the study program, the general regulations of the faculty, and the general regulations of the University.
3. Information about the proposed mentor
3.1. Name and surname of the proposed mentor:
Nenad Filipović
3.2. Academic title and election date:
Prof. dr. – 27.05.2010.
3.3. Scientific field/narrow scientific field for which the mentor is elected:
Applied mechanics, Applied Information Technology and Computer Engineering
3.4. Scientific-research organization where the mentor is employed:
Faculty of Engineering, University of Kragujevac
3.5. The list of references required to fulfil mentorship conditions according to Standard 9 (authors, paper title, journal title, volume, year of publication, pages from-to, DOI number, category):
1. Jeremic J, Govoruskina N, Bradic J, Milosavljevic I, Srejovic I, Zivkovic V, Jeremic N, Nikolic Turnic T, Tanaskovic I, Bolevich S, Jakovljevic V, Bolevich S, Zivanovic MN, Okwose N, Seklic D, Milivojevic N, Grujic J, Velicki L, MacGowan G, Jakovljevic DG, Filipovic N. Sacubitril/valsartan reverses cardiac structure and function in an experimental model of hypertension-induced hypertrophic cardiomyopathy. Mol Cell Biochem. 2023 Mar 30. ISSN: 0300-8177 doi: 10.1007/s11010-023-04690-7. M23 2. Kojic M, Milosevic M, Simic V, Milicevic B, Geroski V, Nizzero S, Ziemys A, Filipovic N, Ferrari M. Smeared Multiscale Finite Element Models for Mass Transport and Electrophysiology Coupled to Muscle Mechanics. Front Bioeng Biotechnol. 2019 Dec 10;7:381. doi: 10.3389/fbioe.2019.00381. ISSN: 2296-4185 M21 3. Koshy A, Okwose NC, Nunan D, Toms A, Brodie DA, Doherty P, Seferovic P, Ristic A, Velicki L, Filipovic N, Popovic D, Skinner J, Bailey K, MacGowan GA, Jakovljevic DG. Association between heart rate variability and haemodynamic response to exercise in chronic heart failure. Scand Cardiovasc J. 2019 Apr;53(2):77-82. doi 10.1080/14017431.2019.1590629. ISSN: 1401-7431, 1651-2006 M23 4. Velicki L, Jakovljevic DG, Preveden A, Golubovic M, Bjelobrk M, Ilic A, Stojsic S, Barlocco F, Tafelmeier M, Okwose N, Tesic M, Brennan P, Popovic D, Ristic A, MacGowan GA, Filipovic N, Maier LS , Olivotto I. Genetic determinants of clinical phenotype in hypertrophic cardiomyopathy. BMC Cardiovasc Disord. 2020 Dec 9;20(1):516. doi: 10.1186/s12872-020-01807-4. ISSN: 1471-2261 M23 5. Smole T, Žunković B, Piculin M, Kokalj E, Robnik-Šikonja M, Kukar M, Fotiadis DI, Pezoulas VC, Tachos NS, Barlocco F, Mazzarotto F, Popović D, Maier L, Velicki L, MacGowan GA, Olivotto I, Filipović N, Jakovljević DG, Bosnić Z. A machine learning-based risk stratification model for ventricular tachycardia and heart failure in hypertrophic

cardiomyopathy. Comput Biol Med. 2021 Aug;135:104648. doi: 10.1016/j.compbiomed.2021.104648. ISSN: 00104825 M21

3.6. The list of references demonstrating mentor's expertise related to the proposed doctoral dissertation topic (authors, paper title, journal title, volume, year of publication, pages from-to, DOI number, category):

1. Filipovic, N., Kojic, M., Tsuda, A., Modeling thrombosis using dissipative particle dynamics method, Philosophical Transactions of the Royal Society. A, Vol.366, No.1879, pp. 3265-3279, ISSN 1364-503, 2008. M21
2. G Pelosi, D Panetta, F Vozzi, F Viglione, N Filipovic, I Savelijc, T Exharcos, P471Site-specific shear stress-plaque severity relations by high axial resolution coronary profiling in an animal model of atherogenesis, Cardiovascular research, Vol.103, No.1, pp. -, ISSN 0008-6363, 2014. M21
3. Hetterich Holger, Jaber Ahmad, Gehring Moritz, Curta Adrian, Bamberg Fabian, Filipovic Nenad D, Rieber Johannes, Coronary Computed Tomography Angiography Based Assessment of Endothelial Shear Stress and Its Association with Atherosclerotic Plaque Distribution In-Vivo, Plos One, Vol.10, No.1, pp. -, ISSN 1932-6203, Doi 10.1371/journal.pone.0115408, 2015. M21
4. Arso M Vukicevic, Serkan Çimen, Nikola Jagic, Gordana Jovicic, Alejandro F Frangi, Nenad Filipovic, Three-dimensional reconstruction and NURBS-based structured meshing of coronary arteries from the conventional X-ray angiography projection images, Scientific reports, Vol.8, No.1, pp. 1-20, ISSN 2045-2322, Doi 10.1038/s41598-018-19440-9, 2018. M21
5. O. Parodi, T. Exarchos, P. Marraccini, F. Vozzi, Z. Milosevic, D. Nikolic, A. Sakellarios, P. Siogkas, D.Fotiadis, N.Filipovic, Patient-specific prediction of coronary plaque growth from CTA angiography: a multiscale model for plaque formation and progression, Information Technology in Biomedicine, Vol.16, No.5, pp. 952-956, ISSN -, 2012. M21
6. 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, No.-, pp. 826-833, ISSN 0045-7930, Doi 10.1016/j.compfluid.2013.07.006, 2013. M21
7. D Nikolić, M Radović, S Aleksandrić, M Tomašević, N Filipović, Prediction of coronary plaque location on arteries having myocardial bridge, using finite element models, Computer methods and programs in biomedicine, Vol.117, No.2, pp. 137-144, ISSN 0169-2607, Doi 10.1016/j.cmpb.2014.07.012, 2014. M21
8. Hetterich Holger, Jaber Ahmad, Gehring Moritz, Curta Adrian, Bamberg Fabian, Filipovic Nenad D, Rieber Johannes, Coronary Computed Tomography Angiography Based Assessment of Endothelial Shear Stress and Its Association with Atherosclerotic Plaque Distribution In-Vivo, Plos One, Vol.10, No.1, pp. -, ISSN 1932-6203, Doi 10.1371/journal.pone.0115408, 2015. M21

3.7. Is the proposed mentor on the List of mentors of the accredited DAS study programme?

YES

3.8. Assessment of the mentor's fulfilment of requirements according to the study programme, faculty's general act, and university's general act (up to 1000 characters):

The committee concludes that the mentor of this doctoral dissertation, Prof. Dr. Nenad Filipović, full professor at the Faculty of Engineering at the University of Kragujevac, meets all the conditions for mentorship in accordance with the study program, the general regulations of the faculty, and the general regulations of the University. Prof. Dr. Nenad Filipović has published a total of 916 papers, including over 160 papers in categories M1-M24. Additionally, Prof. Dr. Nenad Filipović has

participated in numerous EU projects on the topic of cardiovascular diseases and has demonstrated his competence in the field of research for the doctoral dissertation.
4. Information about the proposed co-mentor
4.1. Name and surname of the proposed co-mentor:
-
4.2. Academic title and election date:
-
4.3. Scientific field/narrow scientific field for which the co-mentor is elected:
-
4.4. Scientific-research organization where the co-mentor is employed:
-
4.5. The list of references required to fulfil co-mentorship conditions according to Standard 9 (authors, paper title, journal title, volume, year of publication, pages from-to, DOI number, category):
-
4.6. The list of references demonstrating co-mentor's expertise related to the proposed doctoral dissertation topic (authors, paper title, journal title, volume, year of publication, pages from-to, DOI number, category):
-
4.7. Is the proposed co-mentor on the List of mentors of the accredited DAS study programme?
[choose]
4.8. Assessment of the co-mentor's fulfilment of requirements according to the study programme, faculty's general act, and university's general act (up to 1000 characters):
-
5. CONCLUSION
After reviewing the submitted documentation, the Committee for the composition of the Evaluation report on the scientific topic validity of the doctoral dissertation and fulfilment of the candidate's and proposed mentor's requirements recommends the approval to the candidate Lemana Spahić to proceed with the preparation of a doctoral dissertation entitled "MULTISCALE MODEL FOR THROMBOSIS / ATHEROSCLEROTIC PLAQUE FORMATION AND PROGRESSION". We also approve the appointment of Nenad Filpović, Prof.dr. [co-mentor's name and surname], [academic title] as the mentor/co-mentor.

Committee members:

Miljan Milošević, Prof. Dr.

Faculty of Information Technology Metropolitan University Belgrade

Information technologies and systems

Committee president

Tijana Geroski, Assist. Prof.

Faculty of Engineering, University of Kragujevac

Applied Information Technology in Engineering

Committee member

Nataša Zdravković, Prof. Dr.

Faculty of Medicine, University of Kragujevac

Internal Medicine

Committee member