

SIE 2022

Venue details: Faculty of Mechanical Engineering, University of Belgrade, Kraljice Marije 16, 11000 Belgrade, <http://www.mas.bg.ac.rs/eng/start>

SIE 2022 AGENDA

Agenda Subject to Change

Thursday, September 29, 2022

- 09-10h Registration of participants, room 211, 2nd floor
- 10-11h Opening remarks, room 211, 2nd floor <https://zoom.us/j/98092111406>
- 11-13.30h Opening Plenary Session, room 211, 2nd floor <https://zoom.us/j/98092111406>
- 13.30-14h Coffee Break, room 210, 2nd floor
- 15-18.30h Session 1, room 514, 5th floor, <https://zoom.us/j/94058527124>
- 15-18.30h Session 2, room 518, 5th floor, <https://zoom.us/j/98348067172>
- 19.30-23h Conference dinner, Business club, FME, 5th floor

Friday, September 30, 2022

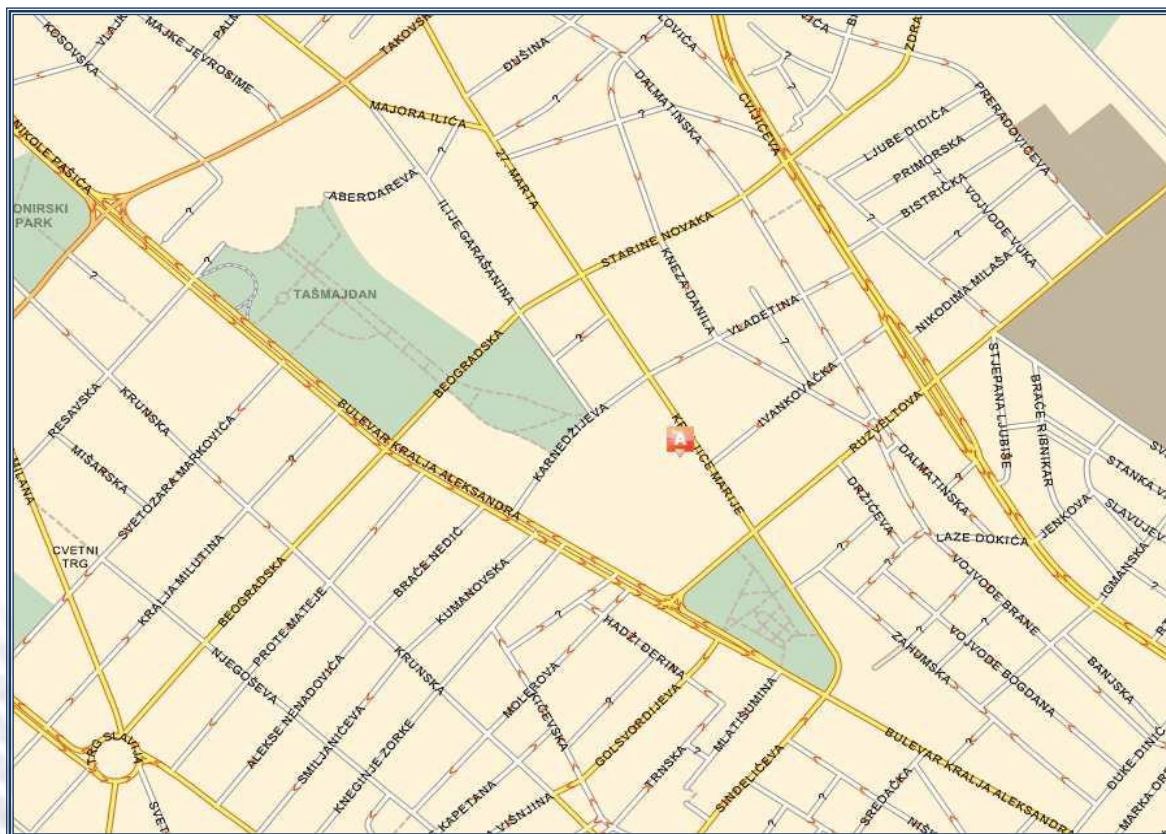
- 10-13.30h Session 3, room 514, 5th floor, <https://zoom.us/j/94183512491>
- 10-13.30h Session 4, room 518, 5th floor, <https://zoom.us/j/93880656574>
- 13.30-14h Coffee Break, room 210, 2nd floor

Conference office: room 514, 5th floor

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OPENING REMARKS

Dr Aleksandar Jović, Assistant Minister, Ministry of Education, Science and Technological Development Republic of Serbia

Katarina Obradović-Jovanović, Assistant Minister, Ministry of Economy, Republic of Serbia

Prof. Dr Vladimir Popović, Dean, University of Belgrade, Faculty of Mechanical Engineering, Republic of Serbia

Prof. Dr Nenad Zrnić, Director, Innovation center, Faculty of Mechanical Engineering, Republic of Serbia

Dr Ivan Rakonjac, Director, Innovation Fund, Republic of Serbia

Mr Mihailo Vesović, Director of the Sector for Strategic Analysis, Services and Internationalization and advisor to the President of the Chamber of Commerce and Industry of Serbia, Republic of Serbia

Prof. Dr Vesna Spasojević Brkić, in front of SIE 2022 organizers, University of Belgrade, Faculty of Mechanical Engineering, Republic of Serbia

**IN MEMORIAM TO PROF. DR NIKOLA DONDUR, the member of SIE 2022 Program
Advisory Committee**

Dr John Weiss, Emeritus Professor of Development Economics at the University of Bradford, UK

**PLENARY SESSION - CHAIRPERSONS: Vesna Spasojević Brkić, Vujadin Vešović,
Teodora Rutar Shuman, Paolo Bragatto, Tijana Vesić Pavlović**

1. *Vesna Spasojević Brkić, Mirjana Misita, Uglješa Bugarić, Zorica Veljković, Tijana Vesić Pavlović*
PROFESSOR VUKAN DEŠIĆ AS THE FOUNDER OF THE DEPARTMENT FOR SCIENTIFIC ORGANIZATION OF WORK: THE 70-YEAR JUBILEE
2. *Vujadin Vešović*
IN THE REMEMBRANCE OF PROFESSOR VUKAN DEŠIĆ, THE DOYEN OF ORGANIZATIONAL SCIENCES AND MANAGEMENT: THE DEVELOPMENT OF SCIENTIFIC ORGANIZATION OF WORK IN THE FNR YUGOSLAVIA AND THE SURROUNDINGS
3. *Teodora Rutar Shuman, Yen-Lin Han, Kathleen E. Cook, Jennifer Turns, Gregory S. Mason*
REVOLUTIONIZING ENGINEERING DEPARTMENT BY CHANGING ITS CULTURE
4. *Paolo Bragatto*
CYBER PHYSICAL SYSTEMS FOR OCCUPATIONAL SAFETY AT INDUSTRIAL SITES: OPPORTUNITIES AND DIFFICULTIES
5. *Eckard Helmers, Chia Chien Chang, Justin Dauwels*
COMPREHENSIVE INSTITUTIONAL CARBON FOOTPRINTING – THE LONG AND DIFFICULT WAY TO ZERO

SESSION 1 - CHAIRPERSONS: Tatjana Šibalija, Katarina Dimić-Mišić, Sanja Stanisavljev

6. *Tanja Sekulić, Iris Borjanović, Dunja Popović*
APPLIED MATHEMATICAL SOFTWARE TOOLS FOR ENGINEERS AT TECHNICAL COLLEGE OF APPLIED SCIENCES IN ZRENJANIN
7. *Dejan Randjic*
ACHIEVING nZEB DESIGN USING GROUND SOURCED HEAT PUMP AND ON-SITE RENEWABLE ENERGY PRODUCTION
8. *Danijela Tadić, Snežana Nestić, Tijana Petrović*
COMBINING MOORA AND DELPHI UNDER INTUITIVE ENVIRONMENT
9. *Dragan Čočkalo, Dejan Đorđević, Cariša Bešić, Sanja Stanisavljev, Mihalj Bakator*
SUSTAINABLE DEVELOPMENT AND ENTREPRENEURSHIP IN THE CONTEXT OF SOCIETY 5.0
10. *Jelena Vukajlović, Sanja Stanisavljev, Zlatko Košut, Mila Kavalić, Dijana Tadić*
APPLICATION OF MODERN CONCEPTS IN PRODUCTION
11. *Milica Vlajković, Dragan Đokić, Tatjana Šibalija*
IMPROVING THE BUSINESS PROCESS BY IMPLEMENTING DOCUMENT MANAGEMENT SYSTEM AND CLOUD INFRASTRUCTURE
12. *Uroš Ilić, Marko Đurović, Aleksandra Joksimović, Emil Veg*
A DESIGN OF A TWO-ARMED ROBOT FOR COMPLEX OBJECTS ASSEMBLY

13. *Jelena R. Jovanović*

UTILIZATION OF MACHINE CAPACITY AND STRUCTURE OF LOSSES PER CAUSE OF DOWNTIME

14. *Aleksandra Taskovic, Tatjana Sibalija*

RFID TECHNOLOGY AUDIT AND CONTROL IN HEALTHCARE SECTOR

15. *Anna Vrabelova, Zuzana Kotianová, Shander Basilio, Peter Darvaši*

PLAN OF THE 5S IMPLEMENTATION IN PROTOTYPE AND INNOVATIVE CENTRE IN FACULTY OF MECHANICAL ENGINEERING OF TUKE

16. *Radisa Jovanovic, Mitra Vesovic, Natalija Perisic*

PI CONTROLLER OPTIMIZATION BY ARTIFICIAL GORILLA TROOPS FOR LIQUID LEVEL CONTROL

17. *Aleksandar Argilovski, Bojan Jovanoski, Robert Minovski, Afet Musliji*

MAPPING THE CURRENT RESEARCH ON THE DIFFERENT VIEWPOINTS REGARDING RELATIONSHIP BETWEEN LEAN AND INDUSTRY 4.0

18. *Nermina Zaimović-Uzunović, Kenan Varda, Ernad Bešlagić*

SAMPLING FREQUENCY INFLUENCE ON THE ACCURACY OF VELOCITY MEASUREMENT IN THE WIND TUNNEL

19. *Lazar Djordjevic*

CONCEPTUAL SOLUTION OF OZONIZATION LINE IN DRINKING WATER PREPARATION PLANT

20. *José Sobral*

UNDERSTANDING ASSET MANAGEMENT MATURITY LEVEL IN INDUSTRIAL ORGANIZATIONS

21. *José Sobral*

DEVELOPMENT OF A MODEL TO ASSESS TOTAL PRODUCTIVE MAINTENANCE IN AN INDUSTRIAL FACILITY

22. *Nikola Raičević, Danilo Petrašinović, Aleksandar Grbović, Miloš Petrašinović, Mihailo Petrović*

FREECAD IMPORT AIRFOIL MACRO - DRAWING AIRFOIL GEOMETRY IN AN OPEN-SOURCE CAD PROGRAM

23. *Nora Trklja Boca, Žarko Z. Mišković, Katarina Dimić-Mišić, Bratislav M. Obradović, Radivoje M. Mitrović, Milorad M. Kuraica*

BEHAVIOUR OF INDUSTRIAL STEEL UNDER HIGH THERMAL LOADS PRODUCED BY PLASMA FORMED WITHIN MAGNETOPLASMA COMPRESSOR

24. *Dragan Milković, Vojkan Lučanin, Saša Radulović, Aleksandra Kostić*

OVERVIEW OF ACTIVITIES RELATED TO THE PROVISION OF LOGISTICAL SUPPORT DURING THE IMPLEMENTATION OF TYPE TESTS OF RAILWAY VEHICLES

25. *Thad Maloney, Josphat Phiri*

GRAPHENE/NANOCELLULOSE CO-EXFOLIATION FOR GREEN COMPOSITES

SESSION 2 - CHAIRPERSONS: Andrea Sütőová, Bojan Jovanoski, Miro Hegedić

26. *Bojan Jerinic, Nemanja Sremcevic, Ilija Cosic*
EXAMINING THE RELATIONSHIP BETWEEN INDUSTRY 5.0 AND LEAN PHILOSOPHY
27. *Afet Musliji, Bojan Jovanoski, Robert Minovski, Aleksandar Argilovski*
DIGITAL TWIN APPLICATIONS IN MANUFACTURING – LITERATURE REVIEW AND RESEARCH DIRECTIONS
28. *Srđan Mladenović, Dragan Pavlović, Peđa Milosavljević*
LEAN METHODOLOGY IN HEALTHCARE
29. *Ivan Tomašević, Dragana Stojanović, Barbara Simeunović, Ivona Jovanović, Dragoslav Slović*
LEAN APPROACH TO IMPROVING THROUGHPUT IN UN-PACED ASSEMBLY LINE: ACTION RESEARCH REPORT
30. *Miro Hegedić, Nataša Tošanović, Roberto Skoliber, Jakov Bošnjak*
INCREASING THE PRODUCTIVITY OF PRODUCTION PROCESS IN FOOTWEAR INDUSTRY BY ADOPTING LEAN TOOLS
31. *Natalija Perisic, Radisa Jovanovic*
APPLICATION OF DEEP LEARNING IN QUALITY INSPECTION OF CASTING PRODUCTS
32. *Marija Savković, Nikola Komatina, Carlo Caiazzo, Marko Đapan*
IMPROVING THE QUALITY OF FINAL PRODUCT BY POKA-YOKE SYSTEM ON ASSEMBLY WORKSTATION: A CASE STUDY
33. *Sanela Arsić, Ana Rakić, Maja Glogovac, Anđelka Stojanović, Jelena Ruso, Isidora Milošević*
ENTROPY-TOPSIS METHOD FOR RANKING INDUSTRIES ACCORDING TO QUALITY 4.0 MATURITY LEVEL
34. *Branislav Tomic*
QUALITY IMPROVEMENTS IN QUALITY 4.0
35. *Ilija Tabasevic*
A TEMPERATURE MAPPING EXPERIMENT IN A PHARMACEUTICAL WAREHOUSE
36. *Andrea Sütőová, Katarína Teplická, Klaudia Budišová*
JOB ANALYSIS OF QUALITY INSPECTORS FOR IDENTIFICATION OF EFFICIENCY IMPROVEMENT POSSIBILITIES
37. *Ivan Simonovic, Pavle Ljubojevic, Tamara Vasiljevic*
STANDARDIZATION IN THE FIELD OF MACHINE ELEMENTS AND DESIGN
38. *Dejan Kovacevic, Sanja Stanisavljev, Zlatko Košut, Dragan Čockalo, Dejan Đorđević*
MODERNIZATION OF PRODUCTION USING LEAN, JIT CONCEPT
39. *Ā. Kol, A. Glisic*
A CASE STUDY ON RISK MANAGEMENT IN AN OPEN-PIT CALCITE MINE
40. *Ernest Barcelo, Katarina Dimic-Misic, Monir Imani, Patrick Gane, Hummel Michael*
REGULATORY PARADIGM OF MODERN ENERGY SECTOR IN RENEWABLE ENERGY GRIDS
41. *Ernest Barcelo, Monir Imani, Michael Hummel, Patrick Gane*
BLOCKCHAIN IN MODERN ENERGY SECTOR

42. *Ana Bantić, Marija Milanović*
ANALYTIC HIERARCHY PROCESS ANALYSIS OF QSG USABILITY EVALUATION
43. *Goran Đurić, Ana Bantić, Petar Đurić*
AUTOMATIC GENERATION OF DATA FLOW DIAGRAM

SESSION 3 - CHAIRPERSONS: Ivan Mihajlović, Mirjana Misita, Zoran Anišić, Maria Francesca Milazzo

44. *Damir Ilić, Isidora Milošević, Tatjana Ilić-Kosanović*
SMART CITIES IN THE FIGHT AGAINST THE COVID-19 PANDEMIC - LESSONS FOR THE CITY OF BELGRADE
45. *Branislav Petrovic, Milan Gojak*
ENERGY EFFICIENCY IMPROVEMENT POTENCIAL AND ENERGY SAVING STRATEGIES IN GLOBAL INDUSTRIAL SECTOR
46. *Andelka Stojanović, Nenad Milijić, Isidora Milošević, Ivan Mihajlović*
SMEs' DIGITALIZATION IMPACT ON ECONOMIC DEVELOPMENT
47. *Luka Djordjevic, Sanja Stanisavljev, Eleonora Desnica, Borivoj Novakovic, Mica Djurdjev, Mihalj Bakator*
TECHNICAL PERFORMANCE PREDICTION OF THE 1MW SOLAR POWER PLANT IN THE CITY OF ZRENJANIN
48. *Nikola Komatina, Aleksandar Aleksić, Nikola Banduka*
DETERMINATION OF FAILURES PRIORITY BASED ON FMEA, FUZZY SETS, AND FUZZY LOGIC RULES
49. *Zoran Nesic, Nikola Komatina, Nebojsa Denic*
APPLICATION OF GENETIC ALGORITHM AND LINEAR PROGRAMMING FOR DETERMINATION OF OPTIMAL PRODUCTION VOLUME
50. *Aleksandar Videnovic, Aleksandar Djurdjevic, Jadranka Labus, Dejana Popovic*
APPARATUS FOR DETERMINING THE EXPLOSION CHARACTERISTICS OF DUST CLOUDS, TEST METHODS AND PROCEDURES
51. *Sanja Puzovic, Jasmina Vesic Vasovic, Vladan Paunovic*
AN APPROACH TO NEW PRODUCT CONCEPT SELECTION DECISION-MAKING
52. *Ivan Mihajlović, Nenad Nikolić, Peter Schulte*
FACTORS AFFECTING SMEs FAILURE - PART ONE: GENERAL ASPECTS
53. *Ivan Mihajlović, Nenad Nikolić, Peter Schulte*
FACTORS AFFECTING SMEs FAILURE - PART TWO: POSSIBILITIES AND BARRIERS OF DIGITALIZATION
54. *Mirjana Misita, Aleksandar Brkić, Vesna Spasojević Brkić, Neda Papić, Martina Perišić, Ivan Rakonjac*
DUMP TRUCK EFFICIENCY AND RISK MAPS: CASE STUDY
55. *Mirjana Misita, Vesna Spasojević Brkić, Milanko Damjanović, Goran Đurić, Neda Papić, Martina Perišić*
EVALUATION OF THE HAMRISK EXPERT SYSTEM BY HIERARCHICAL STRUCTURING OF CRITERIA

56. *Nenad Medic, Zoran Anisic*

COMPARISON OF MCDM METHODS: THE FOCUS ON ALGORITHMS

57. *Milovan Paunić, Vladimir Černicin*

APPLICATION OF FINITE ELEMENT METHOD FOR ANALYSIS THE PARAMETERS OF FRACTURE MECHANICS

58. *Maria Francesca Milazzo, Paolo Bragatto*

UPDATING THE PROBABILITY OF RELEASE DUE EQUIPMENT DETERIORATION USING INCIDENT AND NEAR-MISS DATA

59. *Zorica A. Veljković, Slobodan Lj. Radojević*

CONSTRUCTION OF THE FIVE LEVEL TAGUCHI'S ORTHOGONAL ARRAYS

60. *Bogdan Ristić, Ivan Božić*

A SHORT OVERVIEW ON INDUSTRY 4.0 IN MAINTENANCE OF HYDROPOWER PLANTS

SESSION 4 - CHAIRPERSONS: Uglješa Bugarić, Aleksandar Žunjić, Aleksandra Fedajev

61. *Živan Živković, Marija Panić, Aleksandra Fedajev*

HEALTH SECURITY ASSESSMENT OF THE WESTERN BALKAN COUNTRIES

62. *Aleksandar Brkić*

CRANE OPERATORS' TRAINING IMPORTANCE AND RISK MANAGEMENT

63. *Abdughder Mohahmed Alsharif, Al-Sifao Abdalla Al-Sifao, Hetham Omer Mohamed*

RISK MANAGEMENT FRAMEWORK FOR OCCUPATIONAL HEALTH AND SAFETY IMPROVEMENT IN THE CONTEXT OF INDUSTRIAL TECHNOLOGY INNOVATION

64. *Nemanja Janev, Martina Perišić, Milan Krantić*

CONTINGENCY OF EMPLOYEES' TRAINING

65. *Al-Sifao Abdalla Al-Sifao, Uglješa Bugarić, Abdughder Mohahmed Alsharif, Hetham Omer Mohamed*

PUBLIC-PRIVATE PARTNERSHIP (PPP) PROJECTS IN LIBYA - AN OVERVIEW

66. *Marek Dźwiarek*

SAFETY OF SERVICE WORK AND CYBER SECURITY OF MACHINERY CONTROL SYSTEM IN INDUSTRY 4.0

67. *Višnja Mihajlović, Sanja Stanisavljev, Mila Kavalić, Ali Reza Afshari*

THE CONCEPT OF CIRCULAR ECONOMY IN MODERN BUSINESS

68. *Iosif Aronov, Olga Maksimova*

GENERAL FACTORS INFLUENCING CONSENSUS IN A SOCIAL GROUP

69. *Milica Gerasimovic, Ugljesa Bugaric*

CURRICULUM TO TEACH ARTIFICIAL INTELLIGENCE FOR VET SCHOOL – DESIGNING AND CHALLENGES

70. *Novak Simin, Petar Vrgović*

NEW DEMANDS IN THE ENGINEERING EDUCATION

71. *Marko Orošnjak, Mitar Jocanović, Ivan Beker, Velibor Karanović, Nebojša Brkljač*

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72. *Juraj Glatz, Hana Pačaiová, Zuzana Kotianová, Anna Vrabeľová*
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73. *Milovan Paunić, Vladimir Černicin*
VIRTUAL MODEL GENERATION OF REPRESENTATIVE VOLUME ELEMENT FOR UNIDIRECTIONAL COMPOSITE
74. *Marija Milanović, Neda Papić*
INVESTIGATING RISKS AT WORKPLACES IN THE MACHINE INDUSTRY
75. *Aleksandar Zunjic, Uros Manojlovic, Svetlana Cicevic, Aleksandar Trifunovic*
EVALUATION OF THE USABILITY OF SYMBOLS INDICATING THE STATE OF AUTOMOBILE LIGHTING
76. *Aleksandar Trifunović, Svetlana Čičević, Dalibor Pešić, Maja Petrović, Aleksandar Zunjic, Dragan Lazarević*
THE IMPORTANCE OF TRAFFIC PLAYGROUND DESIGN FOR EDUCATING CHILDREN ABOUT TRAFFIC SAFETY
77. *Katarina Dimic-Misic, Aleksandar Brkic, Monir Imani, Ernest Barcelo, Patrick Gane*
FILTER EFFICIENCY AND AGING IN HEAVY-DUTY VEHICLE CABINS
78. *Marko Djurovic, Uros Ilic, Aleksandra Joksimovic, Emil Veg*
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79. *Katarina Dimic-Misic, Monireh Imani, Gane Patrick*
PRINTABILITY OF ARONIA INKS ON CALCIUM CARBONATE CONTAINING SUBSTRATE
80. *Ivana Nedeljkovic, Mathieu Skrzypczak, Andjelka Glisic*
EXTRACTING VALUE OUT OF QUALITY DATA USING MICROSOFT POWER BI IN AN INDUSTRIAL COMPANY: CASE STUDY
81. *Giuseppa Ancione, Rebecca Saitta, Paolo Bragatto, Giacomo Fiumara, Maria Francesca Milazzo*
PREDICTING AND VISUALISING THE DEGRADATION OF THE BOTTOM OF ATMOSPHERIC STORAGE TANK BY A VIRTUAL SENSOR