SUMMIT

Second Annual Conference, April 2025

Sofia University St. Kliment Ohridski Sofia, Bulgaria





National Recovery and Resilience Plan



OF THE REPUBLIC OF BULGARIA

PROGRAM 01.04.2025 02.04.2025

CONTRACT BG-RRP-2.004-0008 FOR THE FINANCING OF PROJECT "SOFIA UNIVERSITY - MARKING MOMENTUM FOR INNOVATION AND TECHNOLOGICAL TRANSFER" UNDER PILLAR 2 "ESTABLISHING A NETWORK OF RESEARCH HIGHER EDUCATION INSTITUTIONS IN BULGARIA", COMPONENT "INNOVATIVE BULGARIA" FROM NATIONAL RECOVERY AND RESILIENCE PLAN PART OF THE PROGRAM TO ACCELERATE ECONOMIC RECOVERY AND TRANSFORMATION THROUGH SCIENCE AND INNOVATION











01 april 2025, program summary

Aula, Rectorat, Tsar Osvoboditel Blvd 15		
9.00-10.00	Registration and complimentary coffee	
10.00-10.30	Opening ceremony	
10.30-11.00	SUMMIT : Second Year Overview, Prof. Gerdjikov, Prof. Marinov	p. 9
11.00-13.00	Poster session for the 3.4 Groups - Questions and Answers	p. 9
12.00-14.00	12.00-14.00 Lunch break, "Alma Mater" restaurant	
16.00-16.30 Coffee break		

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	Cer	tral lobby, Rectorat, Tsar Osvoboditel Blvd 15	
	All day	Poster session for the 3.4 Groups	p. 21

Aula, Rectorat, Tsar Osvoboditel Blvd 15		
14.00-18.00	3.1.15 European Values and Social Challenges /EuVaSC/, Prof. Maria Stoicheva, PhD	p. 11









OF THE REPUBLIC OF BULGARIA

april 2025, program

Hall 1, Rectorat, Tsar Osvoboditel Blvd 15 14.00-18.00 3.1.7 Functional materials, Prof. Tony Spassov p. 12

Hall 2, Recto	rat, Tsar Osvoboditel Blvd 15	
14.00-18.00	3.1.14 Nuclear, Assoc. Prof. PhD, Krasimir Mitev	p. 13

The Egg Conference Hall, Rectorat, Tsar Osvoboditel Blvd 15			
	14.00-18.00	3.1.16 ICT Applications for History And Language, Assoc. Prof. Dr. Maria Baramova / Prof. DSc Anna-Maria Totomanova	p. 14

Conference Hall, Rectorat, Tsar Osvoboditel Blvd 15		
14.00-18.00	3.1.13 Climate, Weather and Natural Risks (CW&NR), Assoc. Prof. Dr. Guergana Guerova	p. 15

Auditorium	Auditorium 23, Rectorat, Tsar Osvoboditel Blvd 15	
	3.1.8 Plant parasites, Assoc. Prof. Dr Lyuben Zagorchev	n 16
14.00-18.00	3.2.4 Microbiological risks in the environment, Sergei Veselinov Ivanov, PhD	p. 16 p. 17
	3.1.11 Algology (Algal Collections), Assoc. Prof. Blagoy Uzunov, PhD,	μ. 17

Auditorium 4	45, Rectorat, Tsar Osvoboditel Blvd 15	
14.00-18.00	3.1.1 Mathematical Physics and Astrophysics, Prof., DSc Stoytcho Yazadjiev	p. 18

Auditorium 6	53, Rectorat, Tsar Osvoboditel Blvd 15	
14.00-18.00	3.2.5 NUDGE: Behaviour models, attitudes and Policy implementation for sustainable development, Prof. Dr. Ivo Vlaev	p. 19



02 april 2025, program summary

Hall 1, Rectorat, Tsar Osvoboditel Blvd 15		
9.00-13.00	3.1.9 ГАММА, Prof. Dr. Sc. Mladen Savov	p. 26
14.00-18.00	3.1.2 Active formulation and materials, Prof. Slavka Tcholakova	p. 27



Hall 2, Rectorat, Tsar Osvoboditel Blvd 15		
9.00-13.00	3.1.12 Intelligent systems, Prof. Ivan Koychev	p. 28
14.00-18.00	3.1.17 SMEs digitalization, Prof. Dr. Desislava Yordanova	p. 29

The Egg Conference Hall, Rectorat, Tsar Osvoboditel		ference Hall, Rectorat, Tsar Osvoboditel Blvd 15	
	9.00-13.00	3.1.4 Advanced Quantum and Optical Technologies (AQOT), Prof. DSc Asen Pashov	p. 30
	14.00-18.00	3.2.1 NATATA, Prof. Bojan Popov Ph.D.	p. 31

Conference Hall, Rectorat, Tsar Osvoboditel Blvd 15		
9.00-13.00	3.1.10 DigitalEdu-SU, Prof. Dr. Roumiana Peytcheva-Forsyth	p. 32
14.00-18.00	3.2.3 New materials and photonics, Dr. Sotir Chervenkov	p. 33



02 april 2025, program summary

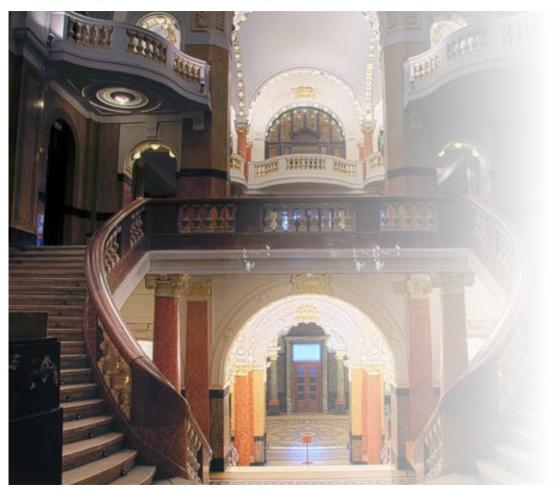


Auditorium 23, Rectorat, Tsar Osvoboditel Blvd 15		
9.00-13.00	3.1.5 Computational Heterogeneous Catalysis, Prof. Hristiyan Aleksandrov Ph.D.	p. 34
	3.2.2 ZeoNeo, Prof. Valentin Valtchev	

Auditorium 45, Rectorat, Tsar Osvoboditel Blvd 15		
9.00-13.00	3.1.6 BAC, Prof. DSc Ivo Grabchev	p. 35
14.00-18.00	3.1.3 GROWTH, Assist. Prof., MD Tsvetelina Velikova Ph.D.	p. 36

Auditorium 65, Rectorat, Tsar Osvoboditel Blvd 15		
13.00-19.00	Social Transformation: Education, Digitization, Organisational and Institutional Change	p. 38

Sofia University St. Kliment Ohridski, Sofia, Bulgaria



























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	Aula, Rectorat, Tsar Osvoboditel Blvd 15	
9.00-10.00	Registration and complimentary coffee	
10.00-10.30	Opening ceremony Address to the Conference from Official Guests	
10.30-11.00	SUMMIT: SECOND YEAR OVERVIEW prof. Anastas Gerdjikov, Leader of The SUMMIT Project, prof. Vasil Marinov, Coordinator research groups - SUMMIT	
11.00-11.30	Poster session for the 3.4 Groups- Questions and Answers	







All day

Central lobby, Rectorat, Tsar Osvoboditel Blvd 15

Lunch break	
01 and 02 April 12.00-14.00	"Alma Mater" restaurant

Coffee br	Coffee break	
01 April 16.00-16.30	Central lobby – for the groups in the Aula, Hall 1, Hall 2 and the Egg. South Wing lobby – or the groups in Auditoriums 23, 45, 63 In front of the Conference Hall – for the group inside	
02 April 10.30-11.00 16.00-16.30	Central lobby – for the groups in Hall 1, Hall 2 and the Egg. South Wing lobby – or the groups in Auditoriums 23, 45, 63 In front of the Conference Hall – for the group inside	

3.1.15 European Values and Social Challenges /EuVaSC/, Prof. Maria Stoicheva, PhD., lead researcher

14.00-18.00 - **Aula. Rectorat**

16.00-16.30 Coffee break

European Values and Social Challenges (EuVaSC)

Opening speech

Professor Maria Stoicheva, Leader of the SUMMIT EUVaSc research group

Panel I: Stability and Resilience of Democracy

Chair: Svetoslav Malinov

Participants:

Daniel Smilov (Sofia University St. Kliment Ohridski) - **Centrist and Radical Populism: Reasons for Radicalisation**

Martin Belov (Sofia University St. Kliment Ohridski) - Crisis, Emergency, and Normalcy - Legal, Socio-Legal, and Imaginary Perspectives

Milen Lyubenov (Sofia University St. Kliment Ohridski) - The pro-Russian far right and party system polarization. Bulgaria, Slovakia and Romania in comparative perspective

Discussion







Panel II: Values and Interests in Contemporary Politics

Chair: Daniel Smilov

Participants:

Svetoslav Malinov (Sofia University St. Kliment Ohridski) - **Changing Paradigms in Contemporary Politics**

Eirikur Bergmann (Bifröst University, Iceland) -The Value of Truth: Populism and Conspiracy Theories

Mila Moshelova (Sofia University St. Kliment Ohridski) - **The Radical Right: Values and Interests**

Discussion







3.1.7 Functional materials,

Prof. Tony Spassov, lead researcher

14.00-18.00 - Hall 1. Rectorat

16.00-16.30 Coffee break

Prof. Tony Spassoy

"Materials for hydrogen production and storage. Metal hydride/air batteries"

Prof. Spas Kolev

"Development of polymer inclusion membranes and beads for separation in industry and chemical analysis"

Prof Todor Dudey

"Encapsulation of chemical substances by cyclodextrins. Host macrocycle's internal cavity hydration"

Prof. Stoyan Gutzov

"Gold nanoparticles in a silica matrix preparation and properties"

Prof. Georgi Tsvetkov

"Novel oxide nanostructures with diverse functionality"

Kalina Myashkova, R1

"PIMs for extraction of thiocyanate and zinc ions"

14.00-18.00 - Hall 2, Rectorat

16.00-16.30 Coffee break

Assoc. Prof. Krasimir Mitev

Opening and overview of the group activities

Assoc. Prof. Krasimir Mitev

Novel radon detectors and networks. Advances in monitoring of indoor Radon dynamics (WP3).

Assoc. Prof. Kalin Gladnishki

Report on the activities in WP1 for the second year of the project SUMMIT (WP1)

Assoc. Prof. Stefan Lalkovski

Nuclear data work package status report (WP2)

Prof. Dobromir Pressyanov

Fine spatial distribution of radon and thoron studied by innovative compact and sensitive detectors. (WP4)

Assoc. Prof. Mariyan Bogomilov

European Spallation Neutrino Super Beam: Prospective and Physics Reach (WP5.1)

Assoc. Prof. Venelin Kozhuharov

Searching for new light particles with PADME: new detectors for new physics (WP5.2)













2025

3.1.16 ICT Applications for History And Language, Assoc. Prof. Dr. Maria Baramova / Prof. DSc Anna-Maria Totomanova. lead researchers

14.00-18.00 - The Egg Conference Hall. Rectorat

16.00-16.30 Coffee break

Maria Baramova, Ivan Valchev, Kristivan Simeonov: DigitalSEE: Unveiling the Tapestry of Balkan Heritage (18th - 19th Century)

Dimitar Iliev. Kristivan Simeonov: A TEI-**Compliant Dataset for Historical Data** from DigitalSEE Collection

Chaydar Kirilov: New Life for an Old Map: A Digital Version of Felix Kanitz's Original-Karte von Donau Bulgarien und dem Balkan

DigitalSEE: Future Perspectives

Angel Nikolov: An unpublished request for financial support from the brotherhood of the monastery of St. Theodore Tiron and St. Theodore Stratelates near Perushtitsa to the Russian Tsar Aleksei Mikhailovich from 1648. Text and context.

Margaret Dimitrova: The Hybrid Language of Josif Bradati's Collection of Sermons against Witches as Compared to the Language of Slavonic-Bulgarian History of Paisii of Hilandar

Anna-Maria Totomanova: The mysteries surrounding manuscript Nº 105 from the Zograf Monastery library

Vassva Velinova, Maria Totomanova-Paneva: Catalogue of the newly acquired Slavonic manuscripts in the library of the Center for Slavo-Byzantine Studies "Prof. lv. Dujcev" in the period 2000-2025

3.1.13 Climate, Weather and Natural Risks (CW&NR), Assoc. Prof. Dr. Guergana Guerova, lead researcher

14.00-18.00 - Conference Hall, Rectorat

16.00-16.30 Coffee break

Severe weather forecasting and nowcasting AProf. Guergana Guerova

Air-quality monitoring and modelling
AProf Reneta Dimitrova

Climate feedbacks inBalkan-Black Sea region AProf. Elisaveta Peneva

Discussion WP1

Climate hazards and risks AProf. Bilvana Borisova

Natural hazards and risks Prof. Kliment Naydenov/ Prof. Janko Gerdjikov

Geospatial modeling and mapping approaches and methods

AProf Stelian Dimitrov

Discussion WP2













3.1.8 Plant parasites,

Assoc. Prof. Dr Lyuben Zagorchev, lead researcher

14.00-18.00 - Auditorium 23. Rectorat

16.00-16.30 Coffee break

Lyuben Zagorchev, Denitsa Teofanova Annual report of Plant parasites working group

Kalina Pachediieva Distribution, hosts and habitats of Cuscuta species in Bulgaria

Stefan Savov **Hormonal governing of Cuscuta** interactions

Bianka Marinova Gene expression profile of Arabidopsis thaliana, challenged with Cuscuta infection

3.1.11 Algology (Algal Collections),

Assoc. Prof. Blagoy Uzunov, PhD, lead researcher

14.00-18.00 - Auditorium 23, Rectorat

16.00-16.30 Coffee break

Maya Stoyneva-Gärtner, Miroslav Androv, Georg Gärtner, Kristian Ivanov & Blagoy Uzunov

New lithophytic algae deposited in ACUS

SUMMIT SOFIA UNIVERSITY MARKING MOMENTUM FOR INNOVATION AND TECHNOLOGICAL TRANSFER





3.2.4 Microbiological risks in the environment, Sergei Veselinov Ivanov, PhD, lead researcher

14.00-18.00 - Auditorium 23, Rectorat

16.00-16.30 Coffee break

 First year of the national wastewater monitoring program - what we did and what we still want to achieve

Sergei Ivanov, Stoyan Shishkov, Anton Hinkov, Yoana Kizheva, Mihaela Belouhova, Zoltan Urshev, Petya Angelova, Silvia Mileva, David Binev, Kamelia Syarova, Kalin Atanasov Characterization of Enterococcus faecalis and Escherichia coli - specific bacteriophages, isolated from waste water facilities in Bulgaria.

Yoana Kizheva, Sergei Ivanov, Yoana Gladicheva, Tsveta Dimova, Maria Pandova, Petya Hristova, Zoltan Urshev, Stoyan Shishkov

71 April 2025







3.1.1 Mathematical Physics and Astrophysics

Prof., DSc Stoytcho Yazadjiev, lead researchers

14.00-18.00 - Auditorium 45. Rectorat

16.00-16.30 Coffee break

Stovtcho Yazadiiev.

Overview of group's work in the second year of the project

Jose Antonio Font

Update on the LIGO-Virgo-KAGRA searches of gravitational waves

Kalin Stavkov.

Neutron stars in Gauss-Bonnet gravity constraints and observable effects

Galin Gyulchev,

Images of shadows and thin accretion disks around Kerr black hole with scalar hair

Petva Nedkova.

Observational signatures of horizonless compact objects in the electromagnetic spectrum: accretion disk images and polarization

Radoslav Rashkov

"On complexity in holography: conformal and warped".

Kiril Hristov

Equivariant topological strings.

Tsyetan Vetsov and Miroslav Radomirov **Optimal Control of Quantum Harmonic** Oscillator in External Magnetic Field.

3.2.5 NUDGE: Behaviour models, attitudes and Policy implementation for sustainable development, Prof. Dr. Ivo Vlaev, lead researcher

14.00-18.00 - Auditorium 63. Rectorat

16.00-16.30 Coffee break

Prof Ivo Vlaev

Behavioral Finance - Identifying Effective **Techniques for Improving Timely Tax** Collection

Prof. Tatvana Tomova, Assoc, Prof. Simeon Petrov Assoc Prof Flena Kalfova **Public Servants' Attitudes Toward** Environmental Policies: Alienation or Commitment. **Environmental Policy Instruments:** Preferences and Attitudes.

Assoc. Prof. Boris Popivanov, Dr. Dimitar Ganev Justifying Environmental Policies: The Alleged Public Opinion Resistance

Assoc. Prof. Svetlina Koleva, Prof. Sonya Karabelova, Prof. Snezhana Ilieva. Assoc. Prof. Kalovan Haralampiev Visible and Invisible Threats - Aspects of **Eco-Anxiety**

Dr. Bilyana Bazovska, Prof. Sonya Karabelova

Theoretical Model for Social Transformation - Downshifting, Career Metamorphosis, Wellbeing and Mental Health

Prof. Sonya Karabelova, Prof. Ivo Vlaev, Assoc. Prof. Kalovan Haralampiev, Dr. Velina Hristova **Eco-Anxiety - Behaviour and Policies**

Prof. Sonya Karabelova, Prof. Snezhana Ilieva, Assoc. Prof. Kaloyan Haralampiev, Assoc Prof Syetlina Koleya Values and Pro-environmental Behaviour

Ch. assistant Dr. Georgi Kirilov **Nudging and Gambling Addiction Prevention**



















All day

Central lobby, Rectorat

Prof. Krasimira Aleksova, Dsc Perceptual Linguistics

Assoc. Prof. Lora Spiridonova, Phd Preschool Teachers' Competence Fields And Their Significance From The Perspectives Of Students, Teachers, Principals, And University Lecturers

Prof. Ivayla Pantcheva

Polyether Ionophores And Their Metal

Complexes

Prof. Ivayla Popova, Phd
Shared Academic Spaces Research On The
Impact Of Shared Academic Spaces On
Student Motivation And Achievements

Assoc. Prof. Dr. Katerina Shtereva
Assessment Of Expressive Language
In Early Childhood: A Pilot Study And
Perspectives For Standardization

Assoc. Prof. Silvena Boteva Effects Of Macrophyte Removal On The Sediment Microbial Activity In High Mountain Lakes

Assoc. Prof. Petar Armyanov

Efficient Calculations And Algorithms

Prof. Dr. Robert Penchovsky

Creation Of Software Systems For Computer-aided Design Of Rapid Allosteric Ribozymes That Sense The Presence Of Sequence-defined Oligonucleotides And A Database Of Clinically Relevant Human Genetic Variation

Assoc. Prof. Ognyan Kassabov **Justice in The Context Of Eco-crisis**

Assoc. Prof. Bozhidar Nedev, Phd
Behavioral Biases In Conflict Resolution In
Financial Sector

Prof. Sonia Ilieva

Nanoconfined Monomethine Cyanine Dye
– Fluorogenic Probe For Cells Staining And
Nucleic Acids Visualization

Assoc. Prof. Dr. Stoycho P. Stoychev
Evaluating The Impact Of Machine Voting
On Voter Turnout In Bulgaria (2021-2023)

Assoc. Prof. Antoniya Valcheva

Study Of High-luminosity Objects In The
Field Of Galaxies From The Local Volume

Assoc. Prof. Noemi Stoichkova

Literary History In The 21st Century: Global Models And Bulgarian Practices













All day | Central lobby, Rectorat

Prof. Nadia Zlateva

Advanced Variational Analysis And
Applications (Avaa)

Assoc. Prof. Aleksandar Dimov, Phd Artificial Intelligence And Big Data For Education, Software And Information Technologies

Assoc. Prof. Dr. Rossitsa Simeonova Values And Human Resource Management In Social Work – Dimensions And Interrelations (Second phase: Managerialism in social services study)

Assoc. Prof. Ivanka Dakova
Synthesis And Characterization Of Ionimprinted Polymeric Materials For Solidphase Extraction Of Sn(Ii) Species

Assoc. Prof. Georgi Nikolaev Georgiev
Establishment And Characterization Of
New Human Embryonic Stem Cell Line

Assoc. Prof. Valentina Ganeva, Phd Pulsed Electric Field Pretreatment Enhances the Enzyme Hydrolysis of Raker's Yeast

Assoc. Prof. Silvia Varbanova, Phd
Beneath The Surface: The Culture Of
Poverty Among Youth In Relative Poverty

Prof. Sylvia Ilieva
Non-communicable Diseases In Bulgaria:
Knowledge, Behaviors, And Risk Profiles

Assoc. Prof. Stefan Miletiev, Phd
Shared Spaces, Tolerance And Volunteering

Prof. Dr. Robert Penchovsky

Design Of Antisense Oligonucleotides

Linked To Cell Penetrating Oligopeptides As

New Antibacterial Agents Against Resistant

Human Pathogenic Bacteria

Assoc. Prof. Dimitar Zlatinov

Challenges For Bulgaria's Human Capital In
Eu Convergence

Prof. Dr. Sc. Nikolay Popov National Model of the American School Counselor Association (ASCA)

Prof. Neviana Krasteva, D.sc.

Gamification In Education And The
Workplace

Assoc. Prof. Dr. Boyan Lomev
Investigating The Effect Of Urban Mobility
Innovation Using Mode-switching Time
Series Methods

All day

Central lobby, Rectorat

Assoc. Prof. Yonka Parvanova
Selection And Qualification Of
Headteachers Of Educational Institutions
In The System Of Pre-school And School
Education

Assoc. Prof. Zdravka Krasteva

Applying The Principles Of Effective Interviewing (Méndez Principles) In Pretrial Criminal Proceedings In Bulgaria

Assoc. Prof. Silvia Tsvetanska

Educational Drama In The Training For Social Workers

Assoc. Prof. Simeon Groysman

Origin, Reception And Application Of Modern Legal Terminology

Assoc. Prof. Milena Milanova

Models For Digital Maturity And Strategies For Digital Transformation Of Glam Institutions In Bulgaria

Assoc. Prof. Albena Taneva, Phd

Application And Development Of The Shared Society Concept: Comparative Models Of Social Inclusion

Assoc. Prof. Bilyana Rangelova

Improving The Health Status Of Children With Sen Through Swimming Education And Trainingma

Prof. V. Dafov

Philosophy With Children's Projections In Kindergardens, Primary And Lower Secondary Schools: Innovations In Philosophy, Civic Eucation And School Life

Assoc. Prof. Dr. Peycho Petkov Complex Systems Modelling

Assoc. Prof. Gergana Fyrkova **Gamification In Education**

Assoc. Prof. Ivanka Tsacheva

Selection Of High Affinity Recombinant Antibodies Against Human Complement Protein C3

Assoc. Prof. Violeta Kotseva, Phd

Bulgarian Communities Abroad: Between Inherited And Invented Identities

Assoc. Prof. Kalin Kalinov

Observations On The Attitudes Of Teachers And Students Towards The User Interface Of Remote Learning Systems

Prof. Neda Balkanska

Application Of Alternative And Augmentative Communication In The Educational Institutions In Bulgaria

Assoc. Prof. Maya Tcholakova, Phd Competency-based Approach In The Education Of Social Pedagogy Students













All day

Central lobby, Rectorat

Prof. Dimo Penkov, Phd

The Christian Apology Against The Dualism Of Eastern Christian Heresies In The Panoplia Dogmatica By Euthymios Zigabenos

Prof. Adriana Damyanova, Dsc

The Reading Practices Of Bulgarian Students /in Bulgarie And Abroad/

Assoc. Prof. Vihra Naydenova, Phd

Influence Of Psychological And Social Factors On Work Engagement And Wellbeing In Organizational Context – First Empirical Results 2024-2025

Prof. Dsc Klara Toneva

Orthodox Theology In Dialogue

Assoc. Prof. Stanimir Kolev

Optimization of magnetically accelerated gliding arc discharge for CO2 conversion at atmospheric pressure

Assoc. Prof. Elena Tasheva- Terzieva
Digitization Of Materials From
The Zoological Collection Of
Sofia University "St. Kliment Ohridski"
(BFUS)

Prof. Silvia Nikolaeva

Social And Pedagogical Paradigms For Research And Modelling Of Educational Ecosystems In Bulgaria

Assoc. Prof. Reneta Raykova
Focal mechanisms: first results by
application of INPAR method in
Bulgarian region











3.1.9 FAMMA,

Prof. Dr. Sc. Mladen Savov, lead researcher

9.00-13.00 - Hall 1. Rectorat

10.30-11.00 Coffee break

The inverse first-passage time problem for stochastic processes

Mladen Savov

Inferring unobservable parameters of the Heston Model

Dragomir Nedeltchev

General Pólya urn model with null part, Yoana Chorbadzhiyska Critical Markov branching processes with infinite mean immigration

Maroussia Slavtchova-Bojkova

Reliability properties of k-out-of-n systems with several cold standby units

Nikolay I. Nikolov

Bidirectional language models through the lens of finite state machines: a theoretical perspective

Stefan Gerdjikov

On the probability of n equidistant points in high-dimensional lattices

Martin Minchev

3.1.2 Active formulation and materials,

Prof. Slavka Tcholakova, lead researcher

14.00-18.00 - Hall 1. Rectorat

16.00-16.30 Coffee break

S. Tcholakova: Summary of the main scientific results obtained by research group "Active formulations and materials" during second year of the project

Discussion

- Z. Mitrinova: "Interplay between cosurfactants and electrolytes for worm-like micelles formation" by Z. Mitrinova, Z. Valkova. S. Tcholakova
- N. Pagureva: "Salt-induced gelation of nonionic sucrose ester dispersions" by Diana Cholakova; Nevena Pagureva; Monika Hristova. S. Tcholakova
- L. Delforce: "Enhancing Foam Properties: Exploring the Impact of Chain Length, Temperature, and Salting-Out in Sucrose Esters" by Lucie Delforce, S. Tcholakova
- B. Petkova: "Mixtures of lauroyl sarcosinate and alkyl polyglycosides: foam and film behaviour" by Borislava Petkova, Slavka Tcholakova

I. Lesov: "Role of dispersion nanostructure for bubble dissolution under pressure"

by I. Lesov, H. Alexandrov, B. Ivanov, J. Delavoipiere, S. Tcholakova

- D. Gazolu-Rusanova: "Emulsifying properties of sodium N-lauroyl sarcosinate" by D. Gazolu-Rusanova, Anna Quero, Z. Mitrinova, S. Tcholakova
- Z. Vinarov: "Mechanisms of dissolution and crystallization of amorphous glibenclamide" by V. Petkov, Z. Vinarov, S. Tcholakova

Fatmegyul Mustan: "Revealing the mechanism of self-assembly of different classes of surfactants by molecular dynamics simulations"

by Fatmegyul Mustan, N. Pagureva, Anela Ivanova, Slavka Tcholakova

Discussion













3.1.12 Intelligent systems. Prof. Ivan Kovchev. lead researcher

9.00-13.00 - Hall 2, Rectorat

10 30-11 00 Coffee break

Intelligent Systems in the Era of large Al models

Reserch group presentation. Ivan Koychev

Multimodal Sentiment Analysis: Recognizing Sentiment in Memes. Georgi Vankov, Dimitar Ilianov Dimitrov, Ivan Koychev, Preslav Nakov.

Generating Phonetic Embeddings for Bulgarian Words with Neural Networks. Lyuboslav Karev, Ivan Koychev.

EurLexSummarization - A New Text Summarization Dataset on EU Legislation in 24 Languages with GPT Evaluation. Valentin Zmiycharov, Ivan Koychev, Todor Tsonkov

Transformer-based approach for symptom recognition and multilingual linking. Sylvia Vassileva, Georgi Grazhdanski, Ivan Koychev, Svetla Boytcheva.

Medical Term Extraction and Linking in Bulgarian Using Large Language Models. Sylvia Vassileva, Svetla Bovtcheva, Ivan Kovchev,

Large Scale Entity Linking to SNOMED CT Using Pretrained Deep Learning Models on MIMIC-IV-Note. Anna Aksenova, Sylvia Vassileva, Svetla Bovtcheva

Transformer-Based Disease and Drug Named **Entity Recognition in Multilingual Clinical Texts:** MultiCardioNER challenge. Anna Aksenova, Aleksis Datseris, Sylvia Vassileva, Svetla Boytcheva

Semeval-2024 task 4: Multilingual detection of persuasion techniques in memes, Dimitar Dimitrov, Firoi Alam, Maram Hasanain, Abul Hasnat, Fabrizio Silvestri, Preslav Nakov, Giovanni Da San Martino

Overview of the CLEF-2024 CheckThat! Lab task 2 on subjectivity in news articles. Julia Maria Struß. Federico Ruggeri, Alberto Barrón-Cedeño, Firoi Alam. Dimitar Dimitrov, Andrea Galassi, Georgi Pachov, Ivan Kovchev, Preslav Nakov, Melanie Siegel, Michael Wiegand, Maram Hasanain, Reem Suwaileh. Waidi Zaghouani

Overview of the CLEF-2024 CheckThat! Lab task 3 on persuasion techniques. Jakub Piskorski, Nicolas Stefanovitch, Firoj Alam, Ricardo Campos, Dimitar Dimitrov, Alípio Jorge, Senja Pollak, Nikolay Ribin, Zoran Fijavž, Maram Hasanain, Purificação Silvano. Elisa Sartori, Nuno Guimarães, Ana Zwitter Vitez, Ana Filipa Pacheco, Ivan Kovchev, Nana Yu, Preslav Nakov, Giovanni Da San Martino

Post-ocr text correction for Bulgarian historical documents. Angel Beshirov, Milena Dobreva, Dimitar Dimitrov, Momchil Hardalov, Ivan Kovchev, Preslav Nakov

Intelligent Search in News Streams and Automated Analysis of News Articles. Maria Nisheva, Alexandrina Karakehavova, Kristian Atanasov

Intelligent Approaches for Tailoring of Video Games. Bovan Bontchev

Current Trends for Applying GenAl in Game-based Learning. Albena Antonova, Boyan Bontchev

Personalization in Educational Video Games. Valentina Terzieva, Bovan Bontchev

Intelligent Adaptation of Difficulty and NPC Behavior in Serious Video Games for Learning. Ivan Navdeniov, Ilko Adamov, Bovan Bontchev,

Collaboration with Bulgarian National Radio. Boris Velichkov, Kazimir Nikolaev, Ivan Koychev

Discussion of future research direction.

Closing. Ivan Koychev





3.1.17 SMEs digitalization,

Prof. Dr. Desislava Yordanova, lead researcher

14.00-18.00 - Hall 2, Rectorat

16.00-16.30 Coffee break

..Women-led SMEs and digital transformation".

Z. Vladimirov, I. Mladenova, O. Harizanova

"SMEs digitalization seen through the "emotional" lens of customers experience: A novel methodology for extraction of NLP-driven knowledge", B. Pelova, G. Hristova

"Mapping Research on Digital **Transformation in Family Business:** A Bibliometric Analysis", D, Yordanova, A. Pergelova, Thuy Nhung Tran

Discussion







3.1.4 Advanced Quantum and Optical Technologies (AQOT),

Prof. DSc Asen Pashov, lead researcher

9.00-13.00 - The Egg Conference Hall. Rectorat

10.30-11.00 Coffee break

aubits

Nikolav Vitanov Overview of WPI-WP3

Kalovan Zlatanov Composite Molmer-Sorensen gate

Ivo Mihov Pulse-shape control on IBM Quantum

Stancho Stanchev Composite single-qubit gates

Hristo Tonchev Suppression of leakage in supercondicting

Branislay Ilic Quantum teleportation on IBM Ouantum

Navden Nedev Dynamical decoupling on IBM Quantum

Peter A Ivanov Super-Heisenberg scaling of the quantum Fisher information using spin-motion states Bogomila S. Nikolova Mechanical Squeezed Kerr Oscillator based on Tapered Ion Trap.

Bogomila S. Nikolova Quantum sensing and metrology in asymmetrical ion traps

Venelin P Paylov Quantum Fisher Information as a measure for many-body localization.

Andon Rangelov Polarization control using quantum optical analoques

Asen Pashov Coupled channels treatment of the double minimum state 615+ in RbCs

Velizar Stovanov Hyperfine structure and line intensities of selected (B-c) -> (a) fluorescence bands in KRb. NaK and NaRb

Prof. Bojan Popov Ph.D., lead researcher

14.00-18.00 - The Egg Conference Hall, Rectorat

16.00-16.30 Coffee break

Numerical analysis and applications, approximation theory and applications

Bojan Popov: Invariant domain preserving approximations of the Lagrangian hydrodynamics equations.

Maya Stoyanova: **PULB pairs of codes found in the \$E_8\$.**

Rumen Uluchev, Ivan Gadjev, Parvan Parvanov: **Higher order approximation of continuous functions by Goodman-Sharma type operators.**

Ivan Gadjev: Hardy Inequalities in Lp and Ip.

Borislav Draganov: Approximation by Kantorovich sampling operators in weighted variable exponent Lebesgue spaces.

Geno Nikolov: Simple bounds for the extreme zeros of Jacobi polynomials.

Georgi Bazlyankov: Pattern formation in a Keller-Segel type system.













3.1.10 DigitalEdu-SU,

Prof. Dr. Roumiana Peytcheva-Forsyth, lead researcher

9.00-13.00 - Conference Hall. Rectorat

10.30-11.00 Coffee break

I - session

DIGITALIZATION IN BULGARIAN EDUCATION – ANALYSIS OF DATA FROM EMPIRICAL RESEARCH IN SECONDARY SCHOOLS

Opening of the conference and presentation of the activities of the DigitalEdu-SU research group from the second year of the project: Researching the "state of the actual" of digitalization in secondary education)

Prof. Roumiana Peytcheva-Forsyth - lead scientist of the research group

Digital Education in Bulgaria in the context of the EU Digital Education Action Plan

Prof. Harvey Mellar, emeritus reader,

Digital maturity of Bulgarian secondary schools - the perspective of school principals, teachers, students and parents

Prof. Rumiana Peytcheva-Forsyth, assoc. prof. Bistra Mizova, d-r Veronika Racheva

The digital professional competencies of Bulgarian teachers in a self-assessment perspective – implications for educational practice

Assoc. prof. Bistra Mizova, prof. Rumiana Peytcheva-Forsyth

Preparing future teachers for the digital transformation in education: Exploring the views and practical strategies of university lecturers

ASSOC. Drof. LYUDKA Aleksieva

Case study on factors for school digitalization - the perspectives of pedagogical specialists from three Bulgarian schools

D-r Maria Petkova and PhD student Devil Kulev

Discussion

II session

PREPARING TEACHERS FOR WORK IN A DIGITAL EDUCATIONAL ENVIRONMENT - DATA FROM EMPIRICAL RESEARCH

Pedagogical digital competencies - what teachers need to know and be able to do based on the teacher preparation curricula

Prof Vasia Delibaltova

Real versus declared strategies for developing digital pedagogical competencies in the training programs of future teachers at Sofia University "St. Kliment Ohridski" - the perspectives of students and their teachers Assoc. prof. Blagovesna Yovkova

Integrating digital technologies into science education in Bulgaria

Assoc. Prof. Elena Boyadzhieva, Assoc. Prof. Milena Kirova, Prof. Adriana Tafrova, Assoc. Prof. Nadezhda Raycheva, Assoc. Prof. Maya Gaydarova and Dr. Ivelina Kotseva

Expected digital competence of first-year students at the Faculty of Mathematics and Informatics

Assoc. Prof. Nikolina Nikolova and Assoc. Prof. Temenuzhka Malcheva

The role of digital technologies in the training of students - future foreign language teachers at the Faculty of Classical and Modern Philology of Sofia University

Assoc. Prof. Irena Dimova, Dr. Mihal Pavlov and Dr. Plamen Tsvetkov

Digital competencies of the geography and history teacher in the Bulgarian school – fundamental principles, opportunities, and limitations

Assoc. Prof. Mava Vasileva & Dr. Katva Misheva

Discussion

SUMMIT SOFIA UNIVERSITY MARKING MOMENTUM FOR INNOVATION AND TECHNOLOGICAL TRANSFER





April 2025

3.2.3 New materials and photonics,

Dr. Sotir Chervenkov, lead researcher

14.00-18.00 - Conference Hall, Rectorat

16.00-16.30 Coffee break

Alexander Dreischuh

Beam and Pulse Shaping Using Optical Vortices: Recent Results. L. Stoyanov, N. Dimitrov, M. Zhekova, N. Gorunski, A. Dreischuh

Georai Georaiev

From Neumann Equation of State to Surface Tension Component Theories: Induced Surface Polarization as a Unifying Concept of Surface Energetics. G. Georgiev, S. Balouchev. M. Bacheva

Kaloyan Genkov

Plasmonic Hot Spots in Conductive Ag Nanowire Meshes. K. Genkov, A. Zyapkov, and G. Tsutsumanova

Jivko Kisiovski

Negative Permittivity of N-grapheneceramic Matrix Composite Obtained by Plasma Enhanced CVD. Zh. Kis'sovski, I. Ivanov, S. Marinov, V. Vachkov, G. Popov, and M. Eneva

Neno Todorov

Raman-active Phonons in Pseudobrookite CoTi2O5: Polarized Raman Spectra and Lattice Dynamical Calculations. N. D. Todorov, M. V. Abrashev, and V. G. Ivanov

Stanislav Balouchev

Minimally Invasive Long-term Monitoring of the Extracellular Oxygen Concentration in the Aquatic Microenvironment. M. Micheva, K. Landfester, S. Baluschev

Veselin Donchey

Study of GaSb Micro-islands Deposited on Si Substrates with Ag Catalytic Nanoparticles. V. Donchev, K. Kirilov, M. Milanova, P. Vitanov, H. Dikov, A. Jaffré, P. Ralova, P. Elenkin

V. Ivanov

One-dimensional Ordered Phases of [Mo6Br14]2- Molecular Anions in Single Walled Carbon Nanotubes - Synthesis, Characterization, Applications. V. Ivanov

Ivan Buchvarov

Thermo-optical Characterization of Yb Doped Crystals for High-Performance Ultrafast Lasers. L. Petrov, K. Georgiev, A. Trifonov I. Buchvarov

Ivan Buchvarov

Study of Chirped Pulse Amplification Performance of Yb:CALYGLO Laser Crystal. L. Petrov, K. Georgiev, A. Trifonov, I. Buchvarov







3.1.5 Computational Heterogeneous Catalysis,

Prof. Hristivan Aleksandrov Ph.D., lead researcher

3.2.2 ZeoNeo.

Prof. Valentin Valtchev. lead researcher

9.00-13.00 - Auditorium 23, Rectorat

10 30-11 00 Coffee break

Synthesis, applications, and quantum-chemical modelling of catalytic materials

Prof. Hristivan Aleksandrov

"Brief introduction of the project and the aroup"

Prof. Francesc Viñes (University of Barcelona, Spain)

"C in and out; interstitial and vacancy effects in heterogeneous catalysis"

Assoc Prof Iskra Koleva

"DFT modeling of complexes of CO with mono- and bimetallic nanoparticles"

Bovana Sabcheva

"Theoretical investigation of the interaction of a boron atom with transition metal nanoparticles"

Dr. Masoomeh Keyhanian "DFT modeling of stability and reducibility of Sm doped CeO2 systems"

Assist. Prof. Kristina Simeonova, Prof. Petko Petkov

"DFT Modelling of 2D conjugated polymers with specific electronic properties"

Prof Valentin Valtchev

"Small pore zeolite for CO2 and CH4 separation"

Assoc. Prof. Rusi Rusev

"New data on the preparation and adsorption properties of embryonic zeolite precursors"

Head Assist, Prof. Hristina Lazarova "Catalytic activity of cobalt- and nickelmodified embryonic zeolites in the reaction of hexane"





2025

3.1.6 BAC,

Prof. DSc Ivo Grabchev, lead researcher

9.00-13.00 - Auditorium 45. Rectorat

10.30-11.00 Coffee break

Prof. Ivo Grabchev

Summary of the results achieved by Working Group 3.1.6 during the second year.

Microbiological activity of new 1,8-naphthalimide derivatives.

Prof. Albena Jordanova

Molecular mechanisms of action of dendrimers with antibacterial activities on model lipid membranes

Assoc. Prof. Stanimir Stoyanov

Efficient method for weak-nucleophile functionalization of 1,8-naphthalimides

Prof. Yulian Zagranyarski

New powerful building block molecules in 1,8-naphthalimide chemistry

Assoc. Prof. Juliana Ivanova

Metal complexes of salinomycin with potential applications as antidotes and antitumor agents.

Assoc. Prof. Megkena Kandinska

Novel benzylidenemalononitriles, benzimidazole and pyrazoline derivatives. Application as metal ion detection sensors, antifungal and antiviral agents.

Assoc. Prof. Ivan Minkov

Model studies of the effect of Spike glycoprotein from SARS-CoV-2 on DOPC membrane monolayers







3.1.3 GROWTH.

Assist. Prof., MD Tsvetelina Velikova Ph.D., lead researcher

14.00-18.00 - Auditorium 45. Rectorat

16.00-16.30 Coffee break

Bridging Science and Innovation: Advances in Diagnosis, Therapy, and Translational Medicine

I session: Biomarkers, diagnostics and pre-clinical studies

Tsvetelina Velikova

Welcome notes and Annual report of 3.1.3. **GROWTH - 2024**

Sioerd Miedema, Dimitrina Miteva, Kremena Navdenova, Vasil Dimitrov, Tsvetelina Velikova Gene expression of cytokines IL-17 and IL-33 in plasma and nasal lavage fluid of patients with allergic rhinitis and bronchial asthma

Kremena Naydenova, Dimitrina Miteva, Vasil Dimitrov, Tsvetelina Velikova Cytokines:

IL-6. IL-13. IL-17. IL-23. IL-27. and IL-33 in Allergic Respiratory Diseases: A Critical Analysis of original results

Adriana Angelova, Stanislava Zlateva, Poli Dimcheva, Petar Stoilov, Antoaneta Mihova, Rosen Mihaylov, Blagovesta Pencheva, Tsvetelina Velikova

Factors Influencing Adjusted Risk For Preeclampsia: A Bulgarian Cross-Sectional Study

Petar Stoiloy Antoaneta Mihoya Rosen Mihaylov, Blagovesta Pencheya, Stanislava Zlateva, Poli Dimcheva, Marinela Kalcheva, Tsvetelina Velikova

Comparative analysis of two IGRA tests for determining the specific response against m. Tuberculosis infection

Marinela Kalcheva, Stanislava Zlateva, Rosen Mihaylov, Blagovesta Pencheya, Betina Angelova, Monika Boncheva, Poli Dimcheva, Petar Stoilov, Antoaneta Mihova, Tsvetelina Velikova

Anti-Nuclear Antibodies Determination - Matches And Discrepancies Between Different Methods For Detection

Dimitrina Miteva, Georgi V Vasilev, Tsvetelina Velikova

Interleukin-17A: A Key Cytokine in **Neurodegenerative Diseases**

Milena Gulinac Tsvetelina Velikova Inflammatory stromal response in neoplastic disease

SUMMIT SOFIA UNIVERSITY MARRING MONERTUM FOR INNOVATION AND TECHNOLOGICAL TRANSP





2 April 2025

II session: COVID-19 and other infections

Emilia Naseva, Verginiya Ivanova, Hristiana Batselova, Latchezar Tomov, Tsvetelina Velikova Four Years Post-Pandemic of SARS-CoV-2: Insights from a Bulgarian Online Survey

Snezhina Lazova, Georgi H Vasilev, Margarita Ganeva, Anna Dasheva, Borislav Ganev, Iren Tzotcheva, Albena Telcharova, Latchezar Tomov, Tsvetelina Velikova

National MISC Register with an Algorithm for Diagnosing and Monitoring Children with MISC, Designed for Use in Future Pandemics Caused by Similar Viruses – A Concept for Pandemic Preparedness

Georgi V Vasilev, Nadzhie Gorelyova, Georgi H Vasilev, Dimitrina Miteva, Iren Tzocheva, Snezhina Lazova, Tsvetelina Velikova Neurological manifestations of MIS-C: a case-based literature review

Eleonora Stamenova, Tsvetelina Velikova Post-COVID treatment options: case-based review

Hristiana Batselova, Kiril Atliev, Karen Djambazov, Latchezar Tomov, Tsvetelina Velikova

Analysis of Post-Vaccination Reactions After Administration Of Pediatric BNT162b2 Vaccine Against COVID-19

Latchezar Tomov, Assen Tchorbadjieff, Stavros Gerasoudis, Tsvetelina Velikova, Hristiana Batselova

Exploring the possible relationship between Covid-19 and scarlet fever in the UK

III session: Therapy

Russka Shumnalieva, Ivan Padjen, Simeon Monov, Tsvetelina Velikova

Emerging role of CAR T cell and Bispecific T cell enganger therapy in rheumatology

Maria Kokudeva, Tsvetelina Velikova Immunomodulatory treatment protocols for infertility patients

Tsvetelina Velikova, Antoaneta Mihova, Rosen Mihaylov, Blagovesta Pencheva

Immunophenotyping in children before and after inosine acedoben dimepranol administration

Lyubomir Chervenkov, Mladen Doykov, Tsvetelina Velikova, Gancho Kostov, Bozhidar Hristov

The Future of Magnetic Resonance Imaging

Petar Kalaydzhiev, Gergana Voynova, Radostina Ilieva, Natalia Spasova, Angelina Borizanova, Elena Kinova, Georgi H Vasilev, Tsvetelina Velikova. Assen Goudev

Cardiometabolic benefits of dual GLP1-RA and SGLT2i therapy in patients with HFPEF, T2DM, obesity, and obstructive sleep apnea: a prospective study

Periklis Siliogkas

Acute right heart failure due to pulmonary embolism from thrombi from cardiac pacemaker wire remnants

DISCUSSION and closing remarks







Social Transformation: Education, Digitization, Organisational and Institutional Change

15.00-19.00 - Auditorium 65. Rectorat

16.00-16.30 Coffee break

Social Transformation: Education. Digitization, Organisational and Institutional Change

Assoc. Prof. Vihra Naydenova

"Influence of Psychological and Social Factors on Work Engagement and Wellbeing in organizational context - first empirical results 2024-2025"

Prof. Plamen Kalchev and Prof. Irina 7 inovieva

"Cyberbullying among students: from attractiveness of the idea to real actions."

Assoc. Prof. Stoycho Stoychev **Evaluating the Impact of Machine Voting** on Voter Turnout in Bulgaria (2021-2023)

Assoc Prof Milena Milanova

"Digital Maturity Models and Digital **Transformation Strategies of GLAM** Institutions in Bulgaria"

Prof. Vesselin Dafov

"Agreement on and taking care of philosophical sessions facilitated trough the Philosophical wondering method."

Assoc. Prof. Anna Beshkova

"Changing Semantics by Setting a New Perspective (Language of Solidarity vs. Language of Division)"

Prof Alexander Kanev

"Modal Ontology and Philosophical Application of Artificial Intelligence"

Assoc Prof Valentina Kaneva Assoc. Prof. Ognvan Kasabov

"Justice in The Context of an Environmental Crisis"

Assoc Prof Albena Taneva

The Importance of Shared Society in a Disrapted World











Contract BG-RRP-2.004-0008 for the financing of project "Sofia University - Marking Momentum for Innovation and Technological Transfer" under pillar 2 "Establishing a network of research higher education institutions in Bulgaria", component "Innovative Bulgaria" from National Recovery and Resilience Plan part of the program to accelerate economic recovery and transformation through science and innovation