

X INTERNATIONAL SCIENTIFIC CONFERENCE

HIGH TECHNOLOGIES. BUSINESS. SOCIETY 2025



PROGRAM

ORGANIZER:

SCIENTIFIC-TECHNICAL UNION OF MECHANICAL ENGINEERING

17 - 20.03.2025

Winter Resort BOROVBETS, BULGARIA

TIME SCHEDULE

12.03.2025 – WEDNESDAY

	PUBLICATION OF ALL REPORTS	
17:00	PROCEEDING "International Scientific Conference "High Technologies. Business. Society", ISSN 2535-0005(Print), ISSN 2535-0013 (Online)	http://www.hightechsociety.eu

17.03.2025 - MONDAY

16:00 – 20:00	REGISTRATION	IN FRONT OF THE CONFERENCE HALL
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18.03.2025 - TUESDAY

08:00 – 10:00	REGISTRATION	IN FRONT OF THE CONFERENCE HALL
10:00 – 10:15	OPENING OF THE CONFERENCE	CONFERENCE HALL
10:15 – 12:00	ORAL PRESENTATIONS	CONFERENCE HALL
12:00	COLLECTIVE PICTURES OF THE PARTICIPANTS	IN FRONT OF HOTEL "ELA"
12:00 - 14:00	LUNCH BREAK	THE RESTAURANT OF HOTEL "ELA"
14:00 – 15:30	Session "INNOVATION AND HIGH TECHNOLOGIES IN WASTE UTILIZATION" (in Bulgarian)	CONFERENCE HALL
15:30 – 16:00	COFFEE BREAK	LOBY BAR OF HOTEL "ELA"
16:00 – 17:30	Session "INNOVATION AND HIGH TECHNOLOGIES IN WASTE UTILIZATION" (in Bulgarian)	CONFERENCE HALL
16:00 – 18:00	DISCUSSIONS	

TUESDAY (18.03.)	10:00 – 16:00	POSTER PRESENTATIONS	CONFERENCE HALL
WEDNESDAY (19.03.)	08:00 – 12:00		

19:00 – 22:00	"WELCOME" COCKTAIL	THE RESTAURANT OF HOTEL "ELA"
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20.03.2025 - THURSDAY

10:00	OPENING OF THE winter session of XXII International Congress MACHINES. TECHNOLOGIES. MATERIALS	CONFERENCE HALL
10:00	OPENING OF The XVIII International Conference for Young Researchers " TECHNICAL SCIENCES. INDUSTRIAL MANAGEMENT "	CONFERENCE HALL
	Departure of the participants	

SCIENTIFIC PROGRAM

18.03.2025 10:00 – 10:15	OPENING OF THE CONFERENCE	CONFERENCE HALL
	CHAIRMAN: PROF. DSC. GEORGI POPOV	
GREETINGS TO THE CONFERENCE PARTICIPANTS PHD ENG. ANGEL DZHORGOV MAYOR OF SAMOKOV MUNICIPALITY		

18.03.2025 10:15 – 12:00	CHAIR: PROF. DSC. KATYA VUTOVA	CONFERENCE HALL	
ORAL PRESENTATIONS			
1	PROTOTYPE AND SOCIAL IMPLEMENTATION OF HANDMADE PLASTIC BOTTLE LANTERNS WITH COLORED LIGHT-EMITTING DIODES, MILK, AND WATER FOR DISASTER PREPAREDNESS	Mayumi Tanaka ¹ , Hiroaki Okino ² , Keiko Ishihara ³ , Yuko Iwahori ⁴ , Satoru Tada ⁵ , Masayuki Yamauch ⁵ , Koji Kakugawa ⁵ , Takeshi Tanaka ⁵ , Katia Vutova ⁶ ¹ Hiroshima Prefectural Hiroshima Minami High School, Hiroshima, Japan ² Hiroshima Prefectural Miyajima High School of Technology, Hatsukaichi, Japan ³ Hiroshima International University, Kure, Japan ⁴ Consolateur Ltd. Tokyo, Japan ⁵ Hiroshima Institute of Technology, Hiroshima, Japan ⁶ Institute of Electronics, Bulgarian Academy of Sciences, Sofia, Bulgaria	06 JP BG
2	“THE GAS BOMBS AND THE DISEASE AND THE FLYING PESTILENCES”: BEAUMONT’S “PLACE OF A MEETING” AS A DEPICTION OF THE AMERICAN REALITY IN THE 1940’S AND THE EARLY 1950’S	Viktoria Basham, PhD Clarke Honors College, Salisbury University, Salisbury, MD, USA	31 USA
3	DIGITAL ENTREPRENEURSHIP EDUCATION: ESSENTIAL TOPICS	Assoc. Prof. Mina Angelova, PhD ¹ ; Dimo Zhelev, PhD ² , Assoc. Prof. Daniela Pastarmadzhieva, PhD ³ University of Plovdiv Paisii Hilendarski, Plovdiv	04 BG
4	A MOBILE APPLICATION FOR ANDROID SUPPORTING SELF-STUDY IN TECHNICAL SCIENCES	Veselka Stoyanova ¹ , Stoyan Chaney ² National Military University, Faculty of Artillery	37 BG
5	ARTIFICIAL INTELLIGENCE AND SOFTWARE CODE SECURITY	Veliyan Dimitrov ¹ , Radostin Nikolov ¹ , Georgi Dimitrov ^{1,2} , Alexander Kirkov ¹ ¹ University of Library Studies and Information Technologies ² Institute of Robotics, BAS	22 BG
6	CLOUD TECHNOLOGIES, ARTIFICIAL INTELLIGENCE AND NATIONAL SECURITY	Veliyan Dimitrov ¹ , Radostin Nikolov ¹ , Georgi Dimitrov ^{1,2} , Alexander Kirkov ¹ ¹ University of Library Studies and Information Technologies ² Institute of Robotics, BAS	23 BG

12:00	COLLECTIVE PICTURES OF THE PARTICIPANTS	IN FRONT OF HOTEL "ELA"
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12:00 – 14:00	LUNCH	THE RESTAURANT OF HOTEL "ELA"
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18.03.2025 14:00 – 15:30	CHAIR: PHD ENG. PENCHO SIRAKOV	CONFERENCE HALL	
Session "INNOVATION AND HIGH TECHNOLOGIES IN WASTE UTILIZATION" (in Bulgarian)			
7	TECHNOLOGICAL FOUNDATIONS OF AN INNOVATIVE WASTE MANAGEMENT MODEL "THE POLLUTER PAYS". APPLICATIONS IN BULGARIAN MUNICIPALITIES	Eng. Georgi Kisyov RISK Electronics - Sofia	BG
8	USE OF HOUSEHOLD AND CONSTRUCTION GLASS WASTE FOR THE PRODUCTION OF FOAM GLASS AND COMPOSITE FOAM MATERIALS	Prof. Lyuben Lakov et al. Bulgarian Academy of Sciences, Sofia	BG
9	LEADING TECHNOLOGIES AND EQUIPMENT IN EUROPE FOR MECHANICAL PROCESSING OF USED CAR TIRES	Eng. Boyko Trendafilov Bul.Tech Silicon Ltd., Sofia	BG

15:30 – 16:00	COFFEE BREAK	LOBY BAR OF HOTEL "ELA"
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18.03.2025 16:00 – 17:30	CHAIR: PHD ENG. PENCHO SIRAKOV	CONFERENCE HALL	
Session "INNOVATION AND HIGH TECHNOLOGIES IN WASTE UTILIZATION" (in Bulgarian)			
10	USE OF HOUSEHOLD WASTE FOR THE PRODUCTION OF ELECTRICAL ENERGY	Eng. Lyubomir Dimitrov Thermotec Power	BG
11	INNOVATIVE TECHNOLOGY FOR THE PRODUCTION OF NEW, HIGH-CALORIE BIOMASS PELLETS, TYPE "RELO"	Assoc. Prof. Tsvetan Kaldashev et al. Technical University - Sofia	BG
12	Technological equipment of the company "BIMETA" for the production of fuel pellets from biomass	Eng. Dobromir Arabadzhiev Bimeta LTD - Sofia	BG

16:00 – 18:00	DISCUSSIONS
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19:00 – 22:00	"WELCOME" COCKTAIL	THE RESTAURANT OF HOTEL "ELA"
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POSTER PRESENTATIONS

TUESDAY (18.03.)	10:00 – 16:00	SESSION	CONFERENCE HALL	
WEDNESDAY (19.03.)	08:00 – 12:00	“HIGH TECHNOLOGIES”		
13	SOLUTION OF A GENERALIZED SYSTEM OF DIFFERENTIAL EQUATIONS OF INTERCOUPLED ENERGY AND MASS TRANSFER AT SHORT-TERM PHASE CONTACT	Prof. PhD. Renat A. Sadykov, PhD. Airat L. Osipov, PhD. Artem V. Akhmerov Kazan State Power Engineering University	05	RU
14	SIMULATION-BASED ANALYSIS FOR OPTIMIZATION OF STERILIZATION DEVICES IN PLASMA-BASED ION IMPLANTATION TECHNOLOGY	Kohaku Osugi ¹ , Koji Kakugawa, Keita Ashio, Yohta Tsukamoto, Mao Ushida, Takeshi Tanaka Hiroshima Institute of Technology, Hiroshima	15	JP
15	MECHANICAL CHARACTERISATION OF BABBITT ALLOYS SOLIDIFIED UNDER DIFFERENT CONDITIONS	Tatiana Simeonova ^{1,2*} , Rumen Krastev ^{1,2} , Georgi Stoilov ¹ , Vasil Kavardzhikov ¹ Institute of Mechanics at Bulgarian Academy of Sciences, Bulgaria ¹ Institute of Metal Science, Equipment and Technologies with Hydro- and Aerodynamics Centre "Acad. A. Balevski" at Bulgarian Academy of Sciences ²	19	BG
16	ISENTROPIC ANALYSIS OF THE COMPLEX THREE CYLINDER STEAM TURBINE FROM MUNICIPAL SOLID WASTE POWER PLANT	PhD. Mrzljak Vedran ¹ , Prof. PhD. Prpić-Oršić Jasna ¹ , PhD. Poljak Igor ² , PhD. Anđelić Nikola ¹ ¹ Faculty of Engineering, University of Rijeka, Croatia ² Department of maritime sciences, University of Zadar, Croatia	03	HR
17	LOCATION ESTIMATION USING WI-FI MEDIA ACCESS CONTROL ADDRESS AND DEVICE MINIATURIZATION	Masaya Watanabe ¹ , Shuji Ohji ² , Taito Ishikawa ³ , Yuka Ueda ³ , Satoru Tada ³ , Ryota Masumoto ³ , Masayuki Yamauchi ³ , Koji Kakugawa ³ , Takeshi Tanaka ^{3*} , Katia Vutova ⁴ HatanoElectric Co Ltd., Hiroshima, Japan ¹ Chudenko Corporation, Hiroshima, Japan ² Hiroshima Institute of Technology, Hiroshima, Japan ³ Institute of Electronics, Bulgarian Academy of Sciences, Sofia, Bulgaria ⁴	20	JP BG
18	EVOLUTION OF THE MAIN MOVEMENT DRIVE OF METALLIC MACHINERY	Aleksandar Arsic ¹ , Milentije Lukovic ^{2,*} , Nedeljko Ducic ² ELPLANT DOO, Kragujevac, Serbia ¹ Faculty of Technical Sciences - Cacak, University of Kragujevac, Cacak, Serbia ²	28	SR
19	2D GRAPHENE LAYERS IN CHEMIREISTIVE SENSORS	Evgeniy Manoilov ¹ , Ivan Kostic ² , Katia Vutova ¹ , Robert Andok ² Institute of Electronics, Bulgarian Academy of Sciences, Sofia, Bulgaria ¹ Institute of Informatics, Slovak Academy of Sciences, Bratislava, Slovak Republic ²	36	BG SK
20	APPLICATION OF HHO GAS FOR EFFECTIVE STERILIZATION IN PLASMA-BASED ION IMPLANTATION	Koji Kakugawa ^{1,*} , Kohaku Osugi ¹ , Satoshi Tomozawa ¹ , Takeshi Tanaka ¹ , Katia Vutova ² Hiroshima Institute of Technology, Hiroshima, Japan ¹ Institute of Electronics, Bulgarian Academy of Sciences, Sofia, Bulgaria ²	24	JP BG

21	TWO-DIMENSIONAL WS ₂ LAYER IN SENSOR APPLICATION	Robert Andok ¹ , Katia Vutova ² , Ivan Kostic ¹ , Evgeniy Manoilov ² Institute of Informatics, Slovak Academy of Sciences, Bratislava, Slovak Republic ¹ Institute of Electronics, Bulgarian Academy of Sciences, Sofia, Bulgaria ²	35	SK BG
22	DISTRIBUTED TASK ALLOCATION BASED ON HIERARCHICAL INTERACTIONS IN WASP COLONIES	Dorian Minarolli, Hakik Paci Faculty of Information Technology, Polytechnic University of Tirana	12	AL
23	A FREQUENCY-TUNABLE AEROSTAT DIPOLE ANTENNA FOR RADIO COMMUNICATION AND EMC APPLICATIONS	Georgi Chervenkov Technical University - Varna	16	BG
24	SMELTING AND STRUCTURE OF HIGH-ENTROPY ALLOYS OF THE FENICRCUAL SYSTEM	Ruslan Sergiienko ^{1,*} , Roman Serhiiko ¹ , Volodymyr Shcheretskyi ¹ , Olexiy Yakovenko ² , Olexandra Zatsarna ³ , Anatolii Verkhovliuk ¹ Physico-Technological Institute of Metals and Alloys, National Academy of Sciences, Kyiv, Ukraine ¹ , Faculty of Chemistry, Taras Shevchenko National University of Kyiv, Ukraine ² , G. V. Kurdyumov Institute for Metal Physics of the National Academy of Sciences of Ukraine ³ ,	17	UA
25	A NOVEL HYBRID ITERATIVE APPROACH FOR DEFINING PLANE STRESS AND STRAIN STATES	Anis Sulejmani*, Odhisea Koça, Klodian Dhoska Department of Mechanics, Faculty of Mechanical Engineering, Polytechnic University of Tirana	02	AL
26	ACOUSTIC AND SEISMIC CHARACTERISTICS OF A 120 MM MORTAR FIRING	Assoc. Prof. Boychev Y. D., Asenov St. N., MS Eng. Vasilev K. V Institute of Metal Science Equipment and Technologies with Hydroaerodynamics Centre "Acad. A Balevski"	30	BG
27	A COMPARISON OF COMPUTER FORENSIC TOOLS	Valentina Petrova Nikola Vaptsarov Naval Academy, Varna	33	BG
28	APPLICATION OF THE PYTHON PROGRAMMING LANGUAGE IN COMPUTER FORENSICS	Valentina Petrova Nikola Vaptsarov Naval Academy, Varna	34	BG
29	COMPARISON OF IMRT TECHNIQUES FOR HEAD AND NECK CANCER TREATMENTS BASED ON TWO DIFFERENT MATHEMATICAL ALGORITHMS ANISOTROPIC ANALYTICAL ALGORITHM AND CONVOLUTION/SUPERPOSITION	¹ Ervis Telhaj, ^{2,4*} Blerim Rrakaqi, ^{3*} Njomza Elezaj, ⁴ Ylli Kaçiu, ⁴ Bujar Imeri, ² Ardian Kadolli ¹ International Hospital Tirana, Medical Physics Department, Tirana, Albania ² Alma Mater Europaea Campus College "REZONANCA", Prishtina, Kosovo ³ Faculty of Mathematical and Natural Science, Department of Physics, University of Prishtina "Hasan Prishtina", Prishtina, Kosovo ⁴ University Clinical Center of Kosovo, Prishtina, Kosovo	25	AL KO

TUESDAY (18.03.)		10:00 – 16:00	SESSION “BUSINESS”	CONFERENCE HALL	
WEDNESDAY (19.03.)		08:00 – 12:00			
30	THE INNOVATION ENVIRONMENT IN BULGARIA – OPPORTUNITIES AND CHALLENGES		Toni Mihova ¹ , Valentina Nikolova-Alexieva ² , Marian Tzankov ³ Technical University Sofia, Plovdiv branch, Plovdiv, Bulgaria ¹ University of food technologies, Plovdiv, Plovdiv, Bulgaria ² Technical University Sofia, Plovdiv branch, Plovdiv, Bulgaria ³	13	BG
31	DIGITALIZATION, BUSINESS AND DIGITAL MANAGEMENT SYSTEMS		PhD. Migena Zeqo, Prof. Asoc. Valma Prifti* Department of Production and Management, Faculty of Mechanical Engineering, Polytechnic University of Tirana	18	AL
32	AUGMENTED ANALYTICS PLATFORM AND SERVICE 4.0 SOLUTION FOR SERVICE EXCELLENCE		Dimitar Todorov ^{1*} , Nikolay Zografov ^{1,2} , Nadia Bojilova ¹ Danlex 78 EOOD Research center, Sofia ¹ Sofia University “St. Kliment Ohridski”, Faculty of Physics, Sofia ²	21	BG
33	DIGITAL TRANSFORMATION IN HUMAN CAPITAL MANAGEMENT IN TOURISM		Milena Karailieva, New Bulgarian University	29	BG
34	FACTORS AFFECTING THE HOTEL REVENUE MANAGEMENT SYSTEM		Doctor of Economic Sciences, Prof. Sultanova Rena Polad ¹ , Bakhishova Shahnaz Natig ² ¹ MSE Institute of Economics of the Republic of Azerbaijan, ² Azerbaijan Tourism and Management University	32	AZ
35	IMPROVING ECOLOGICAL AND ECONOMICAL RESULTS OF MARINE TRANSPORT BY USING DIFFERENT ADDITIVES ON FUEL		Romanoz Topuria ¹ , Kakhaber Khintibidze ² , Jemal Sharadze ³ , Mindia Surmanidze ³ ¹ Akaki Tsereteli State University, Kutaisi, Georgia; ² Batumi Navigation Teaching University, Batumi, Georgia; ³ Batumi State Maritime Academy, Batumi, Georgia;	27	GE

TUESDAY (18.03.)	10:00 – 16:00	SESSION "SOCIETY"	CONFERENCE HALL	
WEDNESDAY (19.03.)	08:00 – 12:00			
36	PRELIMINARY MEASUREMENT OF TONGUE PRESSURE IN HIGH SCHOOL STUDENTS	<p>Yoko Minami¹, Tatsuyuki Fukuoka², Shigekazu Ishihara³, Yuko Iwahori⁴, Satoru Tada⁵, Masayuki Yamauch⁵, Koji Kakugawa⁵, Takeshi Tanaka⁵, Katia Vutova⁶</p> <p>¹ Hiroshima Prefectural Hiroshima Minami High School, Hiroshima, Japan ² Hiroshima International University, Higashi-Hiroshima, Japan ³ Hiroshima International University, Kure, Japan ⁴ Consolateur Ltd. Tokyo, Japan ⁵ Hiroshima Institute of Technology, Hiroshima, Japan ⁶ Institute of Electronics, Bulgarian Academy of Sciences, Sofia, Bulgaria</p>	08	JP BG
37	MONITORING OF THE OGHASKURA RIVER USING THE ARDUINO-BASED SENSOR SYSTEMS	<p>Natia Kamkamidze, Lamara Gobejishvili, Nino Tsutskiridze, Natia Khazaradze Akaki Tsereteli State University, Kutaisi, Georgia</p>	26	GE

NEXT Conference "HIGH TECHNOLOGIES. BUSINESS. SOCIETY 2026"

09 - 14.03.2026, BOROEVETS, HOTEL "ELA"

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XXX INTERNATIONAL SCIENTIFIC AND TECHNICAL CONFERENCE

FOUNDRY 2025

09-11.04.2025, PLEVEN, HOTEL ROSTOV

www.metalcasting.eu



XXXIII INTERNATIONAL SCIENTIFIC CONFERENCE

trans & MOTAUTO'25

23-26.06.2025, VARNA, FRÉDÉRIC JOLIOT-CURIE IHS

www.trans-motauto.com



XI INTERNATIONAL SCIENTIFIC CONGRESS

INNOVATIONS 2025

23-26.06.2025, VARNA, FRÉDÉRIC JOLIOT-CURIE IHS

www.innova-eng.eu



X INTERNATIONAL SCIENTIFIC CONFERENCE - SUMMER SESSION

INDUSTRY 4.0

25-28.06.2025, VARNA, FRÉDÉRIC JOLIOT-CURIE IHS

www.industry-4.eu



XIII INTERNATIONAL SCIENTIFIC CONGRESS

AGRICULTURAL MACHINERY 2025

25-28.06.2025, VARNA, FRÉDÉRIC JOLIOT-CURIE IHS

www.agrimachinery.net

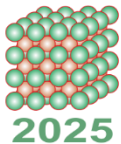


XIII INTERNATIONAL SCIENTIFIC CONFERENCE

ENGINEERING. TECHNOLOGIES. EDUCATION. SECURITY 2025

01-04.09.2025, VARNA, FRÉDÉRIC JOLIOT-CURIE IHS

www.techtos.net



XI INTERNATIONAL SCIENTIFIC CONFERENCE

MATERIAL SCIENCE.

NONEQUILIBRIUM PHASE TRANSFORMATIONS 2025

01-04.09.2025, VARNA, FRÉDÉRIC JOLIOT-CURIE IHS

www.material-science.eu



XXII INTERNATIONAL SCIENTIFIC CONGRESS - SUMMER SESSION

MACHINES. TECHNOLOGIES. MATERIALS 2025

03-06.09.2025, VARNA, FRÉDÉRIC JOLIOT-CURIE IHS

www.mtmcongress.com



XIX CONFERENCE FOR YOUNG RESEARCHERS

TECHNICAL SCIENCES. INDUSTRIAL MANAGEMENT 2025

03-06.09.2025, VARNA, FRÉDÉRIC JOLIOT-CURIE IHS

www.youngconference.com