

12<sup>th</sup> International Symposium  
MATERIALS, METHODS  
AND TECHNOLOGIES

*We develop the future*

11 – 14 June 2010, Sunny Beach, Bulgaria

Organised by

Bulgarian Academy of Sciences

Union of Scientists in Bulgaria

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## REGISTRATION OF PARTICIPANTS

5 - 6 pm, 11 June in the Imperial Hotel

9.00 – 10.00 am, 12 June in the Imperial Hotel

## SESSION 1 ON 12 JUNE

10.00 – 12.00 am in the hall of the Imperial Hotel

Attention!

Participants in the symposium have 10 minutes to present their papers and 5 minutes for questions and answers.

There may be changes in the order of presentations, which participants will be duly notified about.

To present their papers participants can use a multimedia projector.

## ДОКЛАДИ \*\*\* PAPERS

### SELF-HEALING OF GALVANIC ZINC COATINGS IN THE PRESENCE OF NANO-AGGREGATES

D.A. Koleva<sup>1</sup>, P. Taheri<sup>2</sup>, N. Boshkov<sup>3</sup>, P. Petrov<sup>4</sup>,  
K.van Breugel<sup>1</sup>, J.H.W. de Wit<sup>2</sup> and J.M.C.Mol<sup>2</sup>

<sup>1,2</sup>Delft University of Technology, The Netherlands

<sup>1</sup>Faculty of CiTG, Department Materials & Environment; Stevinweg 1, 2628 CN, Delft;

<sup>2</sup>Faculty 3mE, Department Surfaces & Interfaces, Mekelweg 2, 2628 CD Delft.

<sup>3</sup>Institute of Physical Chemistry, <sup>4</sup>Institute of Polymers

<sup>3,4</sup>Bulgarian Academy of Sciences, Acad. G. Bonchev, bl.11, Sofia 1113, Bulgaria

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### PULSE CATHODIC PREVENTION – AN EFFICIENT AND COST-EFFECTIVE ELECTROCHEMICAL TECHNIQUE FOR CORROSION CONTROL IN REINFORCED CONCRETE

D.A.Koleva<sup>1</sup>, N. Boshkov<sup>2</sup>, K.van Breugel<sup>1</sup>, J.H.W. de Wit<sup>3</sup> and J.M.C. Mol<sup>3</sup>

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SEPARATION EFFICIENCY OF HOLPACK PACKING FOR ETHANOL – WATER  
RECTIFICATION IN DIFFERENT CONCENTRATION RANGES

Simeon R. Darakchiev, Krum A. Semkov

Bulgarian academy of sciences, Institute of chemical engineering, 1113 Sofia, Bulgaria

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ELECTRICAL PROCESSES AND DEVICES FOR CONTROL  
OF PULSE DISCHARGE IN LIQUID MEDIUM

Milena D. Dicheva<sup>1</sup>, Stefan T. Barudov<sup>1</sup>, <sup>1</sup>Technical University of Varna, Varna 9010, Bulgaria

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CORROSION CHARACTERIZATION OF Cr(III)-BASED  
GRAY-BLACK CONVERSION COATINGS ON Zn AND Zn-Co ALLOY

Nikolai St. Boshkov<sup>1</sup>, Stefana D. Vitkova<sup>1</sup>, Neli D. Tsvetkova<sup>1</sup>, Vassil D. Bachvarov<sup>1</sup>,  
Miglena Ts. Peshova<sup>1</sup>, Ludmil G. Lutov<sup>2</sup>, Georgi M. Raichevski<sup>1</sup>

1 – Institute of Physical Chemistry, Bulgarian Academy of Sciences, Sofia 1113,

2 - University of Sofia, Department of Chemistry, Sofia, “James Boucher” No. 1

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METHOD FOR ESTIMATION OF THE GAS PHASE MALDISTRIBUTION  
IN PACKED BED COLUMNS

Tatyana St. Petrova<sup>1</sup>, Simeon R. Darakchiev<sup>2</sup>, Krum A. Semkov<sup>3</sup>, Rumen D. Darakchiev<sup>4</sup>  
<sup>1,2,3,4</sup> Institute of Chemical Engineering, Bulgarian Academy of Sciences, Sofia, Bulgaria,

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TECHNO-ECONOMIC EFFICIENCY OF LOW ENERGY BUILDINGS

Damijana Hrastelj-Ploj, Darko Goricanec, Danijela Dobersek

University of Maribor, Faculty of Chemistry and Chemical Engineering

Smetanova 17, 2000 Maribor, SLOVENIA

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MICROCLIMATE CONDITIONS AND THE DESIGN OF OPTIMAL  
HEAT TRANSFER IN GREENHOUSES

Damijana Meza, Darko Goricanec, Jurij Krope

University of Maribor, Faculty of Chemistry and Chemical Engineering

Smetanova 17, 2000 Maribor, SLOVENIA

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## POSTER SESSION 1

12.00 am – 1.00 pm, 12 June

Venue:

Foyer of the Imperial Hotel

Duration: 1 hour

Attention!

Participants have to arrange their posters on the poster boards  
from 9.00 until 10.00 am on 12 June.

The boards are in the hotel foyer.

There should be two posters on each side of the board.

## ПОСТЕРИ \*\*\* POSTERS

### INFLUENCE OF THE VISCOSITY AND SURFACE TENSION OF THE LIQUID PHASE ON THE WETTABILITY OF DIFFERENT PACKING MATERIALS FOR COOLUMN APPARATUSES

Elena N. Razkazova-Velkova, Daniela B. Dzhonova-Atanasova  
Institute of Chemical Engineering - Bulgarian Academy of Sciences,  
“Acad. G.Bonchev” St., Bl.103, 1113 Sofia

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### MODELING OF ENERGY INTEGRATED ATAD SYSTEM

Natasha Gr. Vaklieva-Bancheva<sup>1</sup>, Elisaveta G. Kirilova<sup>1</sup>,  
Toshko K. Zhelev<sup>2</sup> and Jaime Rojas-Hernandes<sup>2</sup>

<sup>1</sup> Institute of Chemical Engineering, Bulgarian Academy of Sciences,  
“Acad. G. Bontchev” Street Bl.103, 1113 Sofia, Bulgaria.

<sup>2</sup> Department of Chemical and Environmental Science, Plassey Park,  
University of Limerick, Limerick, Ireland.

2

### GAS-HOLD-UP AND BUBBLE SIZE DISTRIBUTION IN A FIBROUS FIXED BED BIOFILM REACTOR

Martin Martinov<sup>1</sup>, Dimiter Hadjiev<sup>2</sup>, Serafim Vlaev<sup>1</sup>

<sup>1</sup> Institute of Chemical Engineering, Bulgarian Academy of Sciences, Sofia 1113, Bulgaria

<sup>2</sup> Laboratoire de Biotechnologie et Chimie Marine, UEB-UBS, Centre de Recherche,  
rue Saint Maude, 56321 Lorient, France

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## ELECTROCHEMICAL OBTAINING OF ALLOY COATINGS

### Zn-Fe-P FROM SULFATE ELECTROLYTES

Vasil D. Bachvarov, Miglena T. Peshova, Stefana D. Vitkova, Nikolai S. Boshkov

Institute of Physical Chemistry, Bulgarian Academy of Sciences, Akad. G. Bonchev str.,  
bl. 11, Sofia 1113, Bulgaria

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## AMYLOLYTIC LACTIC ACID BACTERIA AND THEIR INDUSTRIAL APPLICATION

Penka M. Petrova<sup>1\*</sup> and Kaloyan K. Petrov<sup>2\*</sup>

<sup>1</sup> - Institute of Microbiology, Bulgarian Academy of Sciences, Sofia, Bulgaria,

<sup>2</sup> - Institute of Chemical Engineering, Bulgarian Academy of Sciences, Sofia, Bulgaria

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## BULK CHEMICALS FROM GLYCEROL – THE BULGARIAN CONTRIBUTION TO BIO-BASED DIOLS PRODUCTION

Kaloyan K. Petrov<sup>1\*</sup>, Evgenia K. Vasileva<sup>1\*</sup>, Penka M. Petrova<sup>2</sup>, Venko N. Beschkov<sup>1</sup>

<sup>1</sup> - Institute of Chemical Engineering, Bulgarian Academy of Sciences, Acad. G. Bonchev str., bl. 103,  
Sofia, Bulgaria, <sup>2</sup> - Institute of Microbiology, Bulgarian Academy of Sciences, Sofia, Bulgaria

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## IMPLEMENTATION OF PERVAPORATION IN BIOETHANOL PRODUCTION FROM LIGNOCELLULOSIC MATERIALS

Madlena P. Lazarova<sup>1)</sup>, Anton Friedl<sup>2)</sup>

<sup>1)</sup> Bulgarian Academy of Sciences, Institute of Chemical Engineering, Sofia, Bulgaria

<sup>2)</sup> Vienna University of Technology, Department of Chemical Engineering, Vienna, Austria

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## PERVAPORATION: NEW SEPARATION TECHNIQUE FOR BIOETHANOL RECOVERY AND DEHYDRATION

Madlena P. Lazarova, Institute of Chemical Engineering, Bulgarian Academy of Sciences,  
Sofia, Bulgaria

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## INFLUENCE OF SELECTED POLYPHENOLS ON ANTIOXIDANT ENZYMES ACTIVITY AND EXPRESSION OF BAX AND BCL-2 GENES IN CACO-2 CELLS EXPOSED ON OXIDATIVE STRESS

Aleksandra Duda-Chodak<sup>1</sup>, Tomasz Tarko<sup>1</sup>, Piotr Pierzchalski<sup>2</sup>, and Dorota Markiewicz<sup>1</sup>

<sup>1</sup> Department of Fermentation Technology and Technical Microbiology

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<sup>2</sup> Collegium Medicum, Jagiellonian University, ul Grzegórzecka 16, 31-531 Krakow, Poland

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## INFLUENCE OF EXTRACTION PARAMETERS ON ANTIOXIDANT COMPOUNDS RECOVERY FROM ELDERBERRY

Tomasz Tarko, Aleksandra Duda-Chodak, and Krzysztof Pośnik  
Department of Fermentation Technology and Technical Microbiology  
University of Agriculture in Krakow, Faculty of Food Technology  
ul. Balicka 122, 30-149 Krakow, Poland

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## IMPROVEMENT METHODS OF THE DRINKABLE WATER QUALITY

Aurora Alexandrescu<sup>1</sup>, Adina Simona Alexandrescu<sup>1</sup>, Adrian Constantin Alexandrescu<sup>1</sup>  
<sup>1</sup>Technical University Gheorghe Asachi, Bd. D. Mangeron 67, Iasi 700050, Romania

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## PLASTIC MATERIALS FOR OPTICAL APPLICATIONS

Nina G. Sultanova and Stefka N. Kasarova  
Department of Physics and Mathematics, Assen Zlatarov University, 8010 Burgas, Bulgaria

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## DETERMINATION OF CRITICAL REGIONS FOR CRACKS IN EXTRUDED MATERIAL

Leo Gusel, Ivan Anzel  
University of Maribor, Faculty of Mechanical Engineering, Smetanova 17, 2000 Maribor, Slovenia

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## OPERATIONAL LONG-TERM MONITORING OF ANTIVIBRATION MATS IN TRIAL SECTIONS OF RAILWAY TRACKS

Leoš Horníček<sup>1</sup>  
<sup>1</sup>Czech Technical University in Prague, Faculty of Civil Engineering, Prague 6, Czech Republic

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## RESEARCH PROPERTIES OF POLYMER SOLUTIONS AND MATERIALS RECEIVED FROM THEM

Marianna Y. Nebratenko, Yuriy N. Filatov, Yulia A. Naumova,  
Ludmila R. Lussova, Dmitriy Y. Nebratenko, Aleksandr G. Boksha  
Moscow State Academy of Fine Chemical Technology named after M. V. Lomonosov,  
Vernadskogo Pr., 86, Moscow 119571, Russia

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## PERFECTION OF THE AUTOMATED SYSTEMS OF MACHINE-BUILDING MANUFACTURES

Oleg N. Mikhalev<sup>1</sup>, Alexander S. Yanyushkin<sup>1</sup>, <sup>1</sup> Bratsk state university, 665709 Bratsk, Russia

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## UNCERTAINTY ESTIMATION OF DAMAGE FACTOR OF MATERIALS PROPERTIES UNDER THE PLASMA INFLUENCE

Gennadi Aryassov <sup>1</sup>, Tatjana Barashkova <sup>2</sup>, Veroonika Pelöhh<sup>3</sup>

<sup>1</sup> Department of Mechatronics, Tallinn University of Technology, 19086, Tallinn, Estonia.

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## THE CHANGE AND TRANSFORMATION OF MECHANICAL CHARACTERISTICS OF ALLOYS UNDER THE PLASMA INFLUENCE

Veroonika Pelöhh<sup>1,2</sup>, Ain Ainsaar<sup>1</sup>, Tõnu Laas<sup>1</sup>

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<sup>3</sup> Tallinn University, Institute of Mathematics and Natural Sciences, 25 Narva Road, 10120 Tallinn,

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## DEVELOPING AN ESP COURSE USING A STUDENT CENTERED APPROACH

Tatjana Šinkus, Latvian University of Agriculture, J. Čakstes 5, Jelgava, LV 3001, Latvia

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## PORTABLE EXCILAMPS

Dmitry V. Schitz, Viktor S. Skakun, Viktor F. Tarasenko, Sergey M. Avdeev

Institute of High-Current Electronics, Siberian Branch of Russian Academy of Sciences, Tomsk Russia

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## STUDY AND PURPOSE OF USNIC ACID MOTHER LIQUOR AS POTENTIAL ANTISEPTIC IN SOME PRODUCTS

Goran S. Nikolić<sup>1</sup>, Saša Ž. Zlatković<sup>2</sup>, Tatjana D. Kundaković<sup>3</sup>,  
Dragiša S. Đokić<sup>1</sup>, Aleksandra S. Djordjević<sup>4</sup>, Ivana M. Savić<sup>1</sup>

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<sup>3</sup> Faculty of Pharmacy, Department of Pharmacognosy, 11000 Beograd, Serbia

<sup>4</sup> Faculty of Science, Department of Chemistry, 18000 Niš, Serbia

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## ANALYSIS OF POWER CONVERTER WITH COMPUTER SIMULATION

Goce G. Stefanov<sup>1</sup>, Vasilija J. Sarac<sup>1</sup>, Ljupco V. Karadzinov<sup>2</sup>

<sup>1</sup>University Goce Delecev-Stip, Faculty of Electrical Engineering, Radovis, R.Macedonia,

<sup>2</sup>University Kiril and Metody-Skopje, FEIT, Karbos II, P.BOX 574,1000 Skopje, R.Macedonia

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## SYSTEM STUDYING FOR CREATING A STATISTICAL MODEL OF THE ELECTROLESS COPPER PLATING ON TEXTILES

Mihaela G. Georgieva, Maria Chr. Petrova, Zoya B. Noncheva, Tsvetan M. Dobrev

Rostislav Kaischew Institute of Physical Chemistry, Bulgarian Academy of Sciences, Sofia, Bulgaria,  
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## PROPERTIES OF SILVER-TIN ALLOYS OBTAINED FROM PYROPHOSPHATE-CYANIDE ELECTROLYTES CONTAINING SALTS OF EDTA

Antoaneta T. Hrussanova<sup>1</sup>, Ivan N. Krastev<sup>1</sup>, Gesa Beck<sup>2</sup>, Andreas Zielonka<sup>2</sup>

<sup>1</sup>“Rostislav Kaischew” Institute of Physical Chemistry, Bulgarian Academy of Sciences, Sofia, Bulgaria

<sup>2</sup> Institute of Precious Metals and Metal Chemistry, D-73525 Schwäbisch Gmünd, Germany

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## REMOTE LABORATORIES AND METHODS OF THEIR APPLICATION IN THE STUDY PROCESS

Oleg Shvets<sup>1</sup>, Vello Kukk<sup>2</sup>, Martin Jaanus<sup>2</sup>, Kadri Umbleja<sup>2</sup>

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<sup>2</sup> Tallinn University of Technology Faculty of Information Technology:

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## MODELLING OF CO<sub>2</sub> MASS TRANSFER AND HYDRODYNAMICS IN A SEMI-BATCH REACTOR

Olga Velts<sup>1, 2</sup>, Marjaana Hautaniemi<sup>2</sup>, Mai Uibu<sup>1</sup>, Juha Kallas<sup>1, 2</sup>, Rein Kuusik<sup>1</sup>

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<sup>2</sup>Lappeenranta University of Technology, Laboratory of Separation Technology,

Skinnarilankatu 34, Lappeenranta 53851, Finland

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## EXTRACTION OF BOTANICALS WITH SUPERCRITICAL CARBON DIOXIDE: KINETICS OF LEMON BALM EXTRACTION AT DIFFERENT OPERATIONAL CONDITIONS

Petko Penchev<sup>1, 2</sup>, George Angelov<sup>1</sup>, Jean-Stéphane Condoret<sup>2</sup>, Séverine Camy<sup>2</sup>

<sup>1</sup>Institute of Chemical Engineering, Bulgarian Academy of Sciences, Acad. Bonchev St., Block103,  
1113 Sofia, Bulgaria

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## ON THE MODELING OF MOISTURE ADSORPTION IN A PACKED BED

Petya G. Popova, Christo B. Boyadjiev

Bulgarian Academy of Sciences, Institute of Chemical Engineering,

“Stefan Angelov” Str., Bl. 103, 1113 Sofia, Bulgaria

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## CULTIVATION PROCESS OPTIMIZATION BASED ON GENETIC ALGORITHMS

Olympia N. Roeva<sup>1</sup>, Tanya V. Trenkova<sup>2</sup>

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<sup>2</sup>Institute of Water Problems, Bulgarian Academy of Sciences, Sofia 1113, Bulgaria

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## ELECTRODEPOSITION AND CHARACTERIZATION OF Ni-Mo AND Ni-Mo-W LAYERS ON CARBON FIBERS

Marina H. Arnaudova<sup>1</sup>, Georgi V. Avdeev<sup>1</sup>, Rashko St. Rashkov<sup>1</sup>, Mario Mitov<sup>2</sup>, A. Zielonka<sup>3</sup>, E. Theodoridou<sup>4</sup>

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<sup>3</sup>Forschungsinstitut für Edelmetalle und Metallchemie, Schwäbisch Gmünd, Germany

<sup>4</sup>Institute of Physical Chemistry, Aristotle University, Thessaloniki, Greece

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## THERMAL ANALYSIS AN IMPORTANT TOOL IN HISTORICAL PAPER INVESTIGATION

Sanda Maria Doncea<sup>1,2</sup>, Rodica Mariana Ion<sup>1,2</sup>, Simona Florentina Pop<sup>1,2</sup>, Inna Trandafir<sup>1</sup>, Valentin Niculescu<sup>3</sup>

<sup>1</sup> National Research & Development Institute for Chemistry and Petrochemistry-

ICECHIM, Bucharest, Romania, <sup>2</sup> Valahia University, Targoviste, Romania,

<sup>3</sup> INFLPR, Bucharest-Magurele, Romania

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## STUDY OF SOME SUPRAMOLECULAR AGGREGATES PORPHYRINS-PHTHALOCYANINES

Simona-Florentina Pop<sup>1,2</sup> and Rodica-Mariana Ion<sup>1,2</sup>

<sup>1</sup> National Research & Development Institute for Chemistry and Petrochemistry – ICECHIM, Spl. Independentei, 202, sect. 6, Bucharest, Romania

<sup>2</sup> Valahia University, 2 Carol I Bd, Targoviste, Romania

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## SYNTHESIS AND CHARACTERIZATION OF CORE-SHELL MAGNETITE NANOPARTICLES FOR BIOMEDICAL APPLICATIONS

Sergiu SORA<sup>1</sup>, Rodica Mariana ION<sup>1,2</sup>

1. Universitatea Valahia Targoviste, 2. ICECHIM Bucuresti

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## FOOD HYDROCOLLOIDS IN FRUIT PRODUCTS

S. Boca<sup>1</sup>, E. Berzina<sup>1</sup>, I.Skrupskis<sup>1</sup>, V.Rozenbergs<sup>1</sup>, D.Skrupska<sup>2</sup>

<sup>1</sup>Latvia University of Agriculture, Faculty of Food Technology, Department of Nutrition, Jelgava, Latvia

<sup>2</sup>Latvia University of Agriculture, Department of Languages, Liela str. 2, Jelgava LV-3001, Latvia

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EFFECT OF SOIL FERTILITY AND DIRECT NITROGEN FERTILIZATION

ON THE DURUM WHEAT VARIETIES IN THE CONDITIONS OF CENTRAL SOUTHERN BULGARIA

Galia D. Panayotova, Cotton and Durum Wheat Research Institute, 6200 Chirpan, Bulgaria

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INFLUENCE OF SOME MIXTURES BETWEEN RETARDANTS AND COMBINED HERBICIDES

ON THE GRAIN YIELD AND GRAIN QUALITY OF DURUM WHEAT

Grozi D. Delchev, Galia D. Panayotova, Cotton and Durum Wheat Research Institute, Bulgaria

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INVESTIGATION OF BULGARIAN WINTER BARLY VARIETIES

UNDER CONDITION OF CENTRAL SOUTHERN BULGARIA

Ivan Saldzhiev<sup>1</sup>, Darina Valcheva<sup>2</sup>, Svilen Raykov<sup>3</sup>

<sup>1</sup>Cotton and durum wheat research institute – 6200 Chirpan, Bulgaria,

<sup>2</sup>Agricultural research institute – 8400 Karnobat, Bulgaria

<sup>3</sup>University of Shumen “Bishop Konstantin Preslavsky” – 9700 Shumen, Bulgaria

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ASSESSMENT OF NEW BULGARIAN AND FOREIGN COTTON VARIETIES

BY APPLYING OF CLUSTER ANALYSIS

Ana Stoilova Saldzhieva, Neli K. Valkova,

Cotton and Durum Wheat Research Institute, 6200 Chirpan, Bulgaria

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OBTAINING OF CELLULOSE POLYMER COMPOSITES ON THE BASIS

OF AROMATIC POLYOL AND SECONDARY FIBROUS MATERIAL

Tsvetina N. Ilieva<sup>1</sup>, Sanchi K. Nenkova<sup>1</sup>, Nikolay V. Vasev<sup>1</sup>, Mila P. Tsankova<sup>1</sup> and Michael Herzog<sup>2</sup>

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<sup>2</sup>Technical University of Applied Sciences Wildau, Bahnhofstrasse, D-15745 Wildau, Germany

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ELECTROCHEMICAL DEPOSITION OF ALLOYS BASED ON IRON GROUP METALS

AND THEIR CHARACTERIZATION FOR OXYGEN EVOLUTION REACTION

V. Bachvarov<sup>1</sup>, R. Rashkov<sup>1</sup>, R. Bretzler<sup>2</sup>, A. Zielonka<sup>2</sup>

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<sup>2</sup>Forschungsinstitut für Edelmetalle und Metallchemie, Schwäbisch Gmünd, Germany

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EFFECT OF PACKAGING MATERIALS AND TECHNOLOGIES ON THE MILK POMADE

SWEET *SHERBET* WITH CRUNCHY *PEANUT* CHIP'S COLOUR AT THE SHELF LIFE

Eva Vorma<sup>1</sup>, Sandra Muizniece-Brasava<sup>1</sup>, Lija Dukalska<sup>1</sup>, Janis Skalbe<sup>2</sup>

<sup>1</sup>Department of Food Technology Faculty of Food Technology, Latvia University of Agriculture,

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## PHYSICAL CHARACTERISATION OF MINIMALLY PROCESSED CARROTS STORED IN VARIOUS PACKAGING OF BIODEGRADABLE MATERIALS

Ilze Zosare<sup>1</sup>, Lija Dukalska<sup>1</sup>, Eva Vorma<sup>1</sup>, Sandra Muizniece-Brasava<sup>1</sup>

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Liela str. 2, LV-3001, Jelgava, Latvia.

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## NUMERICAL SIMULATION OF PLASMA FLOW DYNAMICS IN A MAGNETIC CHANNEL

Konstantin V. Vshivkov<sup>1</sup>

<sup>1</sup>Institute of Laser Physics, Siberian Branch of the Russian Academy of Sciences,  
Ac. Lavrentiev ave., 13/3, Novosibirsk 630090, Russia

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## SWEET CORN EARLIER

Ferenc Orosz<sup>1,2</sup>, Katalin Slezák<sup>1</sup>

<sup>1</sup>Department of Vegetable and Mushroom Growing, Corvinus University of Budapest, H-1118  
Budapest, Villányi út 29-43, Hungary.

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Şoseaua Sighişoarei 1C, Romania

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## SESSION 2 ON 12 JUNE

2.00 pm – 16.30 pm in the hall of the Imperial Hotel

### Attention!

Participants in the symposium have 10 minutes to present their papers and 5 minutes for questions and answers.

There may be changes in the order of presentations, which participants will be duly notified about.

To present their papers participants can use a multimedia projector.

### ДОКЛАДИ \*\*\* PAPERS

#### ANALYSIS OF ELECTRICAL PROCESSES IN ALTERNATING VOLTAGE CONTROL SYSTEMS

E. Barudov, E. Panov, S. Barudov, Technical University-Varna, Varna, Bulgaria

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#### ON THE SCALE EFFECT AND SCALE – UP IN THE COLUMN APPARATUSES.

#### 3. CIRCULATION ZONES

Krasi Z. Panayotova<sup>a</sup>, Maria D. Doichinova<sup>b</sup>, Christo B. Boyadjiev<sup>b\*</sup>

<sup>a</sup> Assen Zlatarov University, 1, Prof. Yakimov Bulv., Bourgas, Bulgaria

<sup>b</sup> Institute of Chemical Engineering, Bulgarian Academy of Sciences, Sofia, Bulgaria

2

#### THE PROCESSES OF HEAT AND HUMIDITY EXCHANGE IN THERMO-INSULATING MATERIALS

Judita Cas-Krneza, Danijela Dobersek, Darko Goricanec

University of Maribor, Faculty of Chemistry and Chemical Engineering, Maribor, SLOVENIA

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#### HEAT TRANSMISSION PROCESSES IN THE HEAT PUMP BOREHOLE

Karmen Grabant, Danijela Dobersek, Jurij Krope, Darko Goricanec

University of Maribor, Faculty of Chemistry and Chemical Engineering, Maribor, SLOVENIA

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#### SIGNIFICANCE OF BLANCHING IMPACT ON THE PRODUCTION PROCESS OF HALF-FINISHED FROZEN VEGETABLE PRODUCTS

Evija Berzina<sup>1</sup>, Sigita Boca<sup>1</sup>, Imants A. Skrupskis<sup>1</sup>, Anita Blija<sup>1</sup> and Aivars Aboltins<sup>2</sup>

<sup>1</sup> Department of Nutrition, Latvia University of Agriculture, Liela str. 2, LV-3001, Jelgava, Latvia

<sup>2</sup> Institute of Agricultural Mashinery, Cakstes bulv. 5, LV-3001, Jelgava, Latvia

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## EFFECTIVENESS INCREASE THE LASER SINTERING OF POWDER MATERIAL

Saprykin Alexandr, Saprykina Nataly, Kuzmin Sergey

Yurga technological institute (branch) of Tomsk polytechnic university

652050, Kemerovskaya oblast, Yurga, Leningradskaya st., 26, Russia.

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## ANALYSIS OF THE ELECTROCHEMICAL ACTIVITY OF VARIOUS TYPES OF MATERIALS TOWARDS H<sub>2</sub>O<sub>2</sub> DEPENDING ON THE MEDIUM PH LEVEL

Rosen Miletiev<sup>1</sup>, Vladislava Stefanova<sup>2</sup>, Mitko Georgiev<sup>2</sup>, Ivaylo Simeonov<sup>1</sup>

<sup>1</sup>Technical University – Sofia, 8 Kl. Ohridski Blvd, Sofia 1756, Bulgaria

<sup>2</sup>University of Chemical Technology and Metallurgy – Sofia, Sofia 1756, Bulgaria

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## ПОЛУЧЕНИЕ И ТЕХНОЛОГИЧЕСКАЯ ПЛАСТИЧНОСТЬ ТЕХНИЧЕСКИ ЧИСТОГО ТИТАНА В СУБМИКРОКРИСТАЛЛИЧЕСКОМ СОСТОЯНИИ

Владимир И. Данилов, Лев Б. Зуев, Галина В. Шляхова, Дина В. Орлова, Юрий П. Шаркеев

Институт физики прочности и материаловедения Сибирского отделения РАН,

2/4 Академический проспект, Томск 634021

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## ORIENTATIONAL ANHARMONICITY OF INTERATOMIC INTERACTION IN CUBIC MONOCRYSTALS

Vladimir N. Belomestnykh<sup>1</sup>, Elena P. Tesleva<sup>1</sup>

<sup>1</sup>Yurga Institute of Technology (branch) Tomsk Polytechnic University, 652050, Yurga, Russia

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## POSTER SESSION 2

16.30 am – 17.30 pm, 12 June

Venue:

Foyer of the Imperial Hotel

Duration: 1 hour

Attention!

Participants have to arrange their posters on the poster boards  
from 13.30 until 15.00 am on 12 June.

The boards are in the hotel foyer.

There should be two posters on each side of the board.

### ПОСТЕРИ \*\*\* POSTERS

#### AN APPROACH TO INCREASE THE BANDWIDTH IN HYBRID FIBER-COAXIAL CABLE TELEVISION NETWORKS

Krasen K. Angelov, Technical University of Gabrovo, 4 H. Dimitar str., 5300 Gabrovo, Bulgaria  
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#### MECHANISM OF ANODE PROCESSES IN “CHROMISPEL-C” ELECTROLYTE FOR CHROMIUM PLATING

Rossitsa D. Mantcheva, Detelina L. Mileva,  
Medical University-Plovdiv, Faculty of Pharmacy, Department of Chemistry and Biochemistry  
15-A Vassil Aprilov Blvd. 4002 Plovdiv, Bulgaria  
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#### WOOD POLYMER MICRO- AND NANOCOMPOSITES FOR ELEKTROMAGNETIC WAVE PROTECION

Radka I. Garvanska<sup>1</sup>, Sanchi K. Nenkova<sup>1</sup>, Miroslav N. Kulevski<sup>1</sup>, Tsetina N. Ilieva<sup>1</sup>  
and Michael Herzog<sup>2</sup>

<sup>1</sup> University of Chemical Technoligy and Metallurgy, Sofia

<sup>2</sup> University of Applied Sciences Wildau, Bahnhofstrasse, D-15745 Wildau, Germany

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#### WOOD POLYMER COMPOSITES FOR ELECTROMAGNETIC WAVE PROTECTION

Sanchi K. Nenkova, Radka I. Garvanska, , Miroslav N. Kulevski  
University of Chemical Technoligy and Metallurgy, Sofia 1756, 8 Kl. Ohridski str. Bulgaria

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#### LIGNOCELLULOSE NANOCOMPOSITES

Miroslav N. Kulevski, Sanchi K. Nenkova, Radka I. Garvanska  
University of Chemical Technology and Metallurgy-Sofia

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## QUALITY PARAMETERS OF THERMAL PROCESSED INTEGRATED READY TO EAT MEALS

Iveta Kurzemniece<sup>1</sup>, Sandra Muizniece-Brasava<sup>1</sup>, Lija Dukalska<sup>1</sup>, Evita Straumite<sup>1</sup>, Valda Kozule<sup>1</sup>,

<sup>1</sup>Department of Food Technology, Faculty of Food Technology, Latvia University of Agriculture,

Liela str. 2, LV-3001, Jelgava, Latvia,

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## INVESTIGATION OF POSSIBILITY FOR STABILIZATION OF DIFFERENT NATURAL LIPIDS AND OILS THROUGH THE ADDITION OF PLANT EXTRACT FROM SOPHORA JAPONICA

Slava T. Bahchevanska<sup>1</sup>, Dasha Sp. Mihaylova<sup>2</sup>

Department of Biotechnology, University of Food Technologies, Plovdiv, Bulgaria, Mariza 26, 4002

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## QUALITY ATRIBUTES DRIVEN WEB SERVICES DESIGN METHOD

Edzus Zeiris, Maris Ziema

Riga Technical University, Faculty of Computer Science and Information Technology

Meza 1/3, LV-1048, Riga, Latvia

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## M-LEARNING SUPPORTED BY E-LEARNING FOR ATECHNICAL ENGLISH COURSE

Irena P. Rashkova, Nikolay D. Tsanov, <sup>1</sup>AcsymirySoft, <sup>2</sup>Petar Padalski Street 5, Gabrovo 5300, Bulgaria

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## A FRAMEWORK FOR USABILITY EVALUATION OF ECOMMERCE SERVICES

Koffka Khan, Alexander Nikov, Tricia Rambharose

The University of the West Indies, St. Augustine, Trinidad and Tobago

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## RESEARCH THE INFLUENCE OF THE WEATHERING FACTORS OVER DURABILITY OF TEAK TIMBER DEKING

Panayot A. Panayotov, Boriana V. Petrova, University of Forestry

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## OPTIMIZING THE FORMULATION OF A FILM-COATING COMPOSITION, FORMING A NON-TRANSPARENT AND HARD-COMBUSTIBLE COVER ON WOOD\*

Panayot A. Panayotov<sup>1</sup>, Rumen Krastev<sup>2</sup>, Violeta Y. Petkova-Ruseva<sup>2</sup>

<sup>1</sup>University of Forestry, 1756 Sofia, Kl. Ohridski Boulv. 10, Bulgaria

<sup>2</sup>Central Laboratory of Physico-Chemical Mechanics, BAS, 1113 Sofia, Bulgaria

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## STRUCTURAL STUDY OF COMPOSITE HIGH-STRENGTH SLAG CONCRETE CONTAINING BLENDED CARBONATE ADDITIVE

Violeta J. Petkova-Ruseva, Evelina Ivanova-Simeonova

Central Laboratory of Physico-Chemical Mechnics, BAS, 1113 Sofia

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MATHEMATICAL MODELLING OF THE COMPOSITION OF A HIGH-STRENGTH  
COMPOSITE CONCRETE CONTAINING BLENDED CARBONATE ADDITIVE

Violeta J. Petkova, Rumen K. Krastev

Central Laboratory of Physico-Chemical Mechanics, Bulgarian Academy of Sciences,  
Acad. G. Bonchev Str., Bl.1, Sofia 1113, Bulgaria

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NONLINEAR MODEL PREDICTIVE CONTROL OF BIOTECHNOLOGICAL  
PROCESS FOR ETHANOL PRODUCTION

Tatiana S. Ilkova and Mitko M. Petrov

Centre of Biomedical Engineering, Bulgarian Academy of Sciences,  
105 Acad. George Bonchev Str., Sofia 1113, Bulgaria

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CYCLOTRIVERATRYLENE (CTV) HOST-GUEST COMPLEX  
WITH BIOFLAVONOIDS FORMATION IN SUBCRITICAL WATER MEDIUM

Elena V. Vetrova<sup>1\*</sup>, Anna V. Lekar<sup>2</sup>, Olga V. Phylonova<sup>1</sup>, Elena V. Maksimenko<sup>2</sup>,  
Roman N. Borisenko<sup>1</sup> and Nickolay I. Borisenko<sup>2</sup>

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<sup>2</sup> Ecological Analytical Center of Southern Federal University, Rostov-on-Don, Russia

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PHYSICAL-CHEMICAL CHARACTERIZATION OF SOME DIETARY PRODUCTS  
ENRICHED IN MINERAL SUBSTANCES AND VITAMINS

Alexa Ersilia<sup>1</sup>, Stoin Dana<sup>1</sup>, Trasca Teodor<sup>1</sup>, Cocan Ileana<sup>1</sup>, Negrea Monica<sup>1</sup>

<sup>1</sup> Banat's University of Agricultural Sciences and Veterinary Medicine Timisoara, Romania

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DEGRADATION OF <sup>14</sup>C-GLYPHOSATE IN APPLE PLANTATIONS  
IN AGRO-TECHNIQUES CONDITIONS OF WESTERN ROMANIA

Alexa Ersilia<sup>1</sup>, Iordanescu Olimpia<sup>1</sup>, Lazureanu Aurel<sup>1</sup>, Negrea Monica<sup>1</sup>, Micu Roxana<sup>1</sup>

<sup>1</sup> Banat's University of Agricultural Sciences and Veterinary Medicine Timisoara, Romania

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EDUCATIONAL PROCESS OF INFORMATION AND COMMUNICATION  
TECHNOLOGIES FOR PEOPLE IN VARIOUS PHASES OF GERONTOLOGICAL AGE

Olga Apse, Liepaja University, Liepaja, Latvia

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ABOUT CREATIVE METHODS FOR SOLVING TECHNICAL PROBLEMS

Michail N. Leparov, Technical University- Sofia, 8, Kliment Ohridski Blvd., 1000 Sofia

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## ABOUT SEARCHING FOR HEURISTIC TASKS

Michail N. Leparov, Technical University- Sofia, 8, Kliment Ohridski Blvd., 1000 Sofia

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## ИЗСЛЕДВАНЕ ТВЪРДОСТТА НА СИСТЕМАТА Ti – BC 793У, ПОЛУЧЕНА ЧРЕЗ МАГНЕТРОННО РАЗПРАШВАНЕ

Полина Ил. Милушева – Мандаджиева

Университет „Проф. д-р Асен Златаров”, 8010 Бургас, България

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## MODELING OF DENITRIFICATION BY IMMOBILIZED CELLS IN CONSTANT ELECTRIC FIELD

Tsvetomila Parvanova-Mancheva\*, Venko Beschkov and Tsvetan Sapundzhiev

Institute of Chemical Engineering, Bulgarian Academy of Sciences, 1113 Sofia, Bulgaria

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## CORROSION CHARACTERIZATION OF Cr(III) BASED CONVERSION COATINGS ON Zn AND Zn-Co ALLOY

Nikolai St. Boshkov, Stefana D. Vitkova, Neli D. Tsvetkova, Vassil D. Bachvarov,

Miglena Ts. Peshova, Ludmil G. Lutov, Georgi M. Raichevski

Institute of Physical Chemistry, Bulgarian Academy of Sciences

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## EXTRACTION OF COPPER, ZINC AND IRON FROM CHYDROCHLORIC ACID SOLUTION BY MEANS OF BIFUNCTIONAL EXTRACTANT KELEX 100

Svetlana Zhivkova, George Kyuchoukov

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## OPTIMIZATION OF FLUID BED ROASTING OF ZINC SULFIDE CONCENTRATES

B. S. Boyanov, M. P. Sandalski

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## MANAGEMENT OF CHEMICAL PROCESSES BY WEB-BASED CLIENT-SERVER TECHNOLOGIES

M. P. Sandalski, B. S. Boyanov, P. G. Georgiev, A. Sotirov

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## ЛАГОВОЕ МОДЕЛИРОВАНИЕ ОПТИМАЛЬНЫХ ОБЪЕМОВ ДОБЫЧИ УГЛЯ НА УГОЛЬНЫХ ПЛАСТАХ ШАХТЫ «КОТИНСКАЯ» КУЗНЕЦКОГО УГОЛЬНОГО БАСЕЙНА

Александр А.Ордин<sup>1</sup>, Владимир И. Клишин<sup>1</sup>, Василий М.Гончаров<sup>1</sup>

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## INFLUENCE OF ANHARMONICITY CURRENT-PHASE DEPENDENCE ON PROPERTIES OF WEAK LINKS OF JOSEPHSON TYPE

Daulet M. Sergeev<sup>1</sup>, Kuanyshbek Sh. Shunkeyev<sup>2</sup>

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<sup>2</sup>Aktobe State Pedagogical Institute, A. Moldagulova avenue 34, Aktobe, Kazakhstan

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## THE NEW TECHNOLOGICAL MODEL OF ENTERPRISE 2.0 IN A CONTEXT OF GLOBAL COMPETITIVENESS

Domenico Consoli

Business and Law Department, University of Urbino "Carlo Bo", 61029 Urbino, Italy

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## THE MULTIDIMENSIONAL MODEL OF KNOWLEDGE MANAGEMENT IN THE COMPETITIVE ENTERPRISE

Domenico Consoli

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## ВЛИЯНИЕ ПРОИЗВОДНЫХ ПИПЕРИДИНА НА СЕРОВОДОРОДНУЮ КОРРОЗИЮ СТАЛИ

Бибисара Д. Буркитбаева, Марина В. Краснопёрова, Миргуль. Ж. Турмуханова,

Химический факультет, Казахский национальный университет им. аль-Фараби,

050012 Алматы, Казахстан

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## OPTICAL METHOD AND FIREWARE FACILITY OF THE CHECKING TO BIOLOGICAL ACTIVITY WATER SOLUTION

Denis N. Zhdanov<sup>1</sup>, Sergey E. Sorokin<sup>2</sup>

Altai State Technical University by the name I.I. Polzunov<sup>1</sup>

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Federal state establishment «The Altay centre of standardization and metrology»<sup>2</sup>

656010, Russia, Altai region, city Barnaul, avenue P. Sushova 4a<sup>2</sup>

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## ANALYSIS OF THE CONDITIONS FOR SELF-FEEDING IN SEPARATOR TOOLS FOR SURFACE PLASTIC DEFORMATION

Nely Asenova Georgieva<sup>1</sup>, Veselin Ivanov Grigorov<sup>2</sup>, Stefan Vasilev Kostadinov<sup>3</sup>

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SOCIAL PROGRAMME

SOCIAL PROGRAMME

7.00 pm 12 June

Visit to the Chateau Medovo ethnographic tourist complex.

Price: 30 euros per participant (price includes transport, wine tasting and dinner)

8.30 am – 17.00 pm 13 June

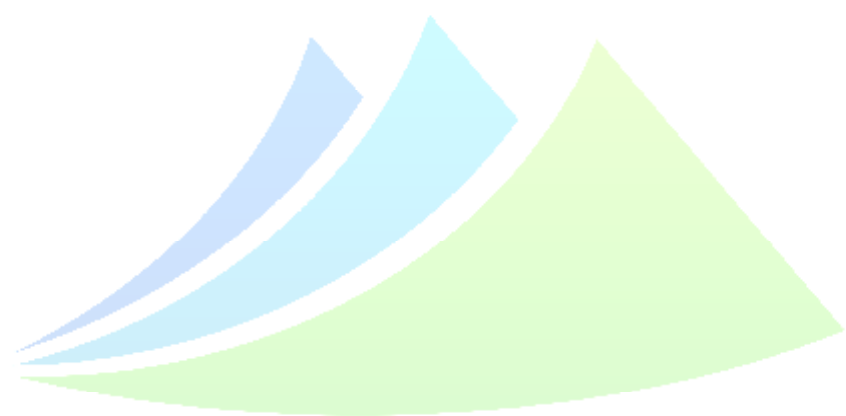
Tour of the Old City of Sozopol.

Price: 40 euros per participant (price includes transport, museum entrance fees, museum guides and dinner)

CLOSING OF THE SYMPOSIUM

14 June in the Imperial Hotel

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