



**“ANGEL KANCHEV” UNIVERSITY OF RUSE
UNION OF SCIENTISTS – RUSE**

**РУСЕНСКИ УНИВЕРСИТЕТ “АНГЕЛ КЪНЧЕВ”
СЪЮЗ НА УЧЕНИТЕ – РУСЕ**

Sessions Schedule & Abstracts

Програма & Резюмета

58th Annual Science Conference of Ruse University

**NEW INDUSTRIES, DIGITAL ECONOMY, SOCIETY -
PROJECTIONS OF THE FUTURE II**

58^{ma} Годишна конференция на Русенския университет

**НОВИ ИНДУСТРИИ, ДИГИТАЛНА ИКОНОМИКА, ОБЩЕСТВО –
ПРОЕКЦИИ НА БЪДЕЩЕТО II**

2019

Silistra, Ruse, Razgrad

NOVEMBER RESEARCH CONFERENCE IN RAZGRAD

Friday 1 November 2019

09:00 - 16:00

Registration - Hotel Les (around the Reception)

11:00 - 13:30

Opening, plenary session

FRI-LCR-KS(R)-01:

Assoc. Prof. Oleksandr Zaichuk, DcS

SHEI Ukrainian State University of Chemical Technology, Ukraine

Physico-chemical basis for the synthesis of ceramic pigments with a structure of various silicates using alternative raw materials

FRI-LCR-KS(R)-02:

Prof. Marko Jukić, PhD

Josip Juraj Strossmayer University of Osijek, Croatia

Functional cookies with the addition of brewer's barley malt and reduced sucrose addition

FRI-LCR-KS(R)-03:

Prof. Alexander Seregin, DcS

National University of Food Technologies, Kiev, Ukraine

Alternative energy suppli of food industry

14:00 - 16:00

Parallel Scientific Sessions Room CR

FRI-CR-1-CT(R)

Chemical Technologies

Session Chair: Tsvetan Dimitrov

FRI-CR-1-CT(R)-01:

Study of the Formation of Ceramic-Metal Coatings for Special Alloys

Victor Goleus, Olena Karasyk, Tsvetan Dimitrov, Tatyana Kozyreva, Andrey Saley

FRI-CR-1-CT(R)-02:

Ionic Silver Zeolite, Method of its Production and its Use for Medical Purposes

Todor Mihalev, Tsvetan Balkanski

FRI-CR-1-CT(R)-03:

Increasing the Strength of Quartz Ceramics

Olena Khomenko, Tsvetan Dimitrov, Oleksandra Makedonskaya

FRI-CR-1-CT(R)-04:

Ab Initio Study of Mechanism of Prebiotic Reactions: from Urea and Glycinamide to Hypoxanthine

Venelin Enchev, Sofia Slavova

14:00 - 16:30

Parallel Scientific Sessions Room LCR

FRI-LCR-1-BFT(R)

Biotechnologies and Food Technologies

Session Chair: Nastia Ivanova

FRI-LCR-1-BFT(R)-01:

Application of Special Method for Treatment of Water Liquid Systems

Iryna Dubovkina

FRI-LCR-1-BFT(R)-02:

Binding Expedient of Phenolic Acids from the Plant *Graptopetalum*

Paraguayense E. Walther to Viral Dna Polymerase Amino Acids: A Theoretical Insight

Nina Stoyanova, Miroslav Rangelov, Petia Genova-Kalu, Venelin Enchev, Nadezhda Markova

FRI-LCR-1-BFT(R)-03:

Assessment of Energy Expenditure on the Kneading Wheat Dough Process

Volodymyr Telychkun, Stanka Damyanova, Andrii Anisimov, Yuliya Telychku

FRI-LCR-1-BFT(R)-04:

Role of Food and Nutrition in Cancer

Cristina Popovici, Tatiana Munteanu

FRI-LCR-1-BFT(R)-05:

Review of the Working Bodies of Vertical Bead Mills

Kateryna Hrininh, Oleksii Gubenia

FRI-LCR-1-BFT(R)-06:

Novel Trends in Meat Packaging: Active Packaging on Microbiological Attributes of Different Types of Fresh Meat and Meat Products

Davor Daniloski, Anka Petkoska

FRI-LCR-1-BFT(R)-07:

Application of Ionizing Radiation for Treating of Modern Materials in Food Processing and Packageing Industry

Delyan Gospodinov, Stefan Stefanov, Vilhelm Hadjiski, Mihail Bechev

19:30

Cocktail

Saturday 2 November 2019

09:30 - 12:00

Parallel Poster Sessions Room Cr

SAT-CR-P-2-CT(R)

Chemical Technologies

Session Chair: Tsvetan Dimitrov

SAT-CR-P-2-CT(R)-01:

Multiparameter Optimization for Generation of Technological and Logistic Solutions for Production and Use of Biodiesel

Yunzile Dzhelil, Evgeniy Ganev, Boyan Ivanov, Dragomir Dobrudzhaliev

SAT-CR-P-2-CT(R)-02:

Application of the Method for Sampling of Silt Loading on Asphalted Roads

Dimitrinka Ivanova, Veselina Yordanova, Emine Ahmed

SAT-CR-P-2-CT(R)-03:

Microencapsulation of Rose Oil by Self-Assembly Method

Stanislav Bayryamov, Maria Nikolova

SAT-CR-P-2-CT(R)-04:

Inhibition of Steel in 0.1 M H₂SO₄

Temenuzhka Haralanova, Christian Girginov, Stephan Kozhukharov

SAT-CR-P-2-CT(R)-05:

Antibacterial Performance of Chitosan Based Membranes Loaded with Tetracycline for Wound Healing Applications

Dilyana Zvezdova, Anife Veli, Radoslava Nikolova

SAT-CR-P-2-CT(R)-06:

Machines and Techniques for Processing Fibers and Finished Products

Tanya Grozeva, Stanislav Bayryamov

SAT-CR-P-2-CT(R)-07:

Preparation of Urea-Formaldehyde Microcapsules Filled with Rose Oil by in *Situ* Polymerization Method. Influence of the Surfactant Concentration

Stanislav Bayryamov, Maria Nikolova

SAT-CR-P-2-CT(R)-08:

Kinetic Study of the Non Isothermal Analysis of Chitosan Shrimp Shells from Black Sea

Dilyana Zvezdova, Nedelcho Nedelchev

SAT-CR-P-2-CT(R)-09:

A Review of Methods and Techniques for Characterization of Structure, Morphology and Dispersion Stability of Microcapsules

Maria Nikolova, Stanislav Bayryamov

SAT-CR-P-2-CT(R)-10:

Analytical Method for Determination of Concentrations of Polycyclic Aromatic Hydrocarbons in Fine Particulates

Stela Naydenova, Anife Veli, Zilya Mustafa, Lenia Gonsalvesh-Musakova

SAT-CR-P-2-CT(R)-11:

Synthesis of Highly Porous Dielectric Mullite Ceramics with Wood Sawdust As Pore- Former

Fila Yovkova, Irena Markovska, Magdalena Mitkova, Dimitar Georgiev, Dimitar Rusev, Yancho Hristov

SAT-CR-P-2-CT(R)-12:

Preparation of Urea-Formaldehyde Microcapsules Filled with Rose Oil by in *Situ* Polymerization Method. Influence of the Stirring Rate, Stirring Time, and Reaction Temperature of the Stirring Process

Stanislav Bayryamov, Maria Nikolova

SAT-CR-P-2-CT(R)-13:

Computer Processing of Thermodynamic Data for Calculation of Equilibrium Constant

Temenuzhka Haralanova, Mariyka Petrova, Iliana Ivanova

SAT-CR-P-2-CT(R)-14:

Liquid Jet Gas Ejectors: Designs of Motive Nozzles, Performance Efficiency

Vitaly Ponomarenko, Tsvetan Dimitrov, Andriy Slyusenko,

Dmitriy Lulka

SAT-CR-P-2-CT(R)-15:

Characterization Techniques for Microcapsules Immobilized on Textiles

Maria Nikolova, Stanislav Bayryamov

SAT-CR-P-2-CT(R)-16:

Structure Properties Investigation of Chitosan Nanocomposite Biofilms

Dilyana Zvezdova

SAT-CR-P-2-CT(R)-17:

Automated Calculation of Equilibrium Constant Using the Tomkin - Schwarzman Method

Mariyka Petrova, Temenuzhka Haralanova, Iliana Ivanova

- SAT-CR-P-2-CT(R)-18: Synthesis and Study of Spinel Ceramic Pigments in the System
 $\text{CoO.ZnO.Al}_2\text{O}_3$
Tsvetan Dimitrov, Tsvetalina Ibrev, Irena Markovska
- SAT-CR-P-2-CT(R)-19: Biodegradable Oils, Lubricants and Additives. Methods for Their Preparation
Vasil Kopchev, Stanislav Bayryamov
- SAT-CR-P-2-CT(R)-20: Preparation of Urea-Formaldehyde Microcapsules by Preliminary Synthesis of Stable Pre-Polymer for its Long Time Storage
Stanislav Bayryamov
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09:30 - 12:00

Parallel Poster Sessions Room LCR

- SAT-LCR-P-2-BFT(R)** **Biotechnologies and Food Technologies**
Session Chair: Iliana Kostova
- SAT-LCR-P-2-BFT(R)-01: Molecular Properties and Bioactivity Score of Newly Synthesized Derivatives of Bexarotene
Yana Koleva, Svetlana Georgieva, Nadya Agova, Ivelin Iliev
- SAT-LCR-P-2-BFT(R)-02: Mechatronic Module for Weight Dosing of Viscoplastic Foods
Oleksandr Gavva, Borys Mykhailyk, Nataliya Kulyk
- SAT-LCR-P-2-BFT(R)-03: Limiting Factors in Processes of Anaerobic Fermentation of Sugar Content Media
Anatoly Sokolenko, Oleksandr Shevchenko, Sergei But
- SAT-LCR-P-2-BFT(R)-04: Influence of Kelp Algae on Wheat Bread Staling
Mimi Petrova
- SAT-LCR-P-2-BFT(R)-05: Adiabatic Dynamina of Cooling Mashing Through Creation of Vacuum in the Fermentation Apparatus
Oleksii Boiko, Svitlana Mironenko
- SAT-LCR-P-2-BFT(R)-06: Parametric Synthesys of Mechatronics Module of Dispensing of Liquid Food Products
Mykola Iakymchuk, Olha Horchakova
- SAT-LCR-P-2-BFT(R)-07: A Survey of the Plant *Graptopetalum Paraguayense* E. Walther for Anti-Influenza Virus Activity
Petia Genova-Kalu, Ivayla Dincheva, Ilian Badjakov, Venelin Enchev, Nadezhda Markova
- SAT-LCR-P-2-BFT(R)-08: Vacuum Cooling of Biscuit Semi-Finished Products
Mykola Desyk, Volodymyr Telychkun, Stanka Damyanova, Yuliya Telychkun
- SAT-LCR-P-2-BFT(R)-09: Nutritional Toxicology - An Overview
Stanislava Georgieva, Petkov Marinov
- SAT-LCR-P-2-BFT(R)-10: The Microstructure of Gerontologic Food Pastes
Oleg Galenko
- SAT-LCR-P-2-BFT(R)-11: Optimization of Meat-Containing Semi-Finished Products Formulations with the Microbiological Derived Proteases Application
Vasyl Pasychnyi, Dmytro Shvediuk
- SAT-LCR-P-2-BFT(R)-12: Microbiological and Physicochemical Analysis of Honey and Cinnamon Yogurt
Ira Taneva, Ivan Dimov, Gjore Nakov
- SAT-LCR-P-2-BFT(R)-13: Complex Analysis of Quality Indices of Ice Cream with the Use of Milk and Protein Concentrates
Tetiana Osmak, Galyna Polischuk, Oksana Kochubei-Lytvynenko, Artur Mykhalevych
- SAT-LCR-P-2-BFT(R)-14: Assessment of the Quality of the Treated Wastewater in Relation to the Amount of Electricity Consumed in WWTP
Rayka Vladova, Natasha Vaklieva-Bancheva
- SAT-LCR-P-2-BFT(R)-15: Research of the Quality Indices of Sour Milk Paste
Oksana Kochubei-Lytvynenko, Ulyana Kuzmyk, Nataliia Yushchenko
- SAT-LCR-P-2-BFT(R)-16: Modeling of the Process of Kneading the Yeast Dough by Modern Working Elements

SAT-LCR-P-2-BFT(R)-13

COMPLEX ANALYSIS OF QUALITY INDICES OF ICE CREAM WITH THE USE OF MILK AND PROTEIN CONCENTRATES

Assoc. Prof. Tetiana Osmak, candidate of Engineering Sciences

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Abstract: *The scientific and practical interest in the dairy industry is the development aimed at obtaining food with high nutritional value, which corresponds to the basic concept of balanced and rational nutrition. These products include the technology of frozen desserts (ice cream) using milk-protein concentrates. At the Department of Technology of Milk and Dairy Products of the National University of Food Technologies (Kyiv, Ukraine), ice cream formulations were developed, which include full-fledged protein concentrates - cottage cheese and soy protein concentrate.*

An objective indicator for assessing the quality of frozen desserts is a comprehensive analysis of organoleptic, physico-chemical characteristics and biological value. Taking into account the complex interaction of qualitative indicators of ice cream, by determining the optimal ratio - milk base: protein component, the rational mass fraction of protein concentrates in ice cream formulations were determined. It is proved that with the help of graph-mathematical method it is possible to predict mass fraction of introduction of protein enrichers in ice cream composition, which will provide a finished product with optimal quality indicators.

Keywords: *ice cream, milk-protein concentrates, graph-mathematical method, complex analysis*

REFERENCES

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- Savchenko, O., Grek O., Krasulya O. (2015). Topical issues of milk and protein concentrate technology: theory and practice.
- Grek, O. (2019). Quality estimation of frozen desserts with polyfunctional composition: Food and Environment Safety, XVIII (1), 36 - 43.
- Dorokhovych, V. (2010). Scientific substantiation and development of technologies of flour confectionery products of special dietary consumption author's abstract diss.cand. tech Sciences: 05.18.16 «Food Technology», Kyiv.