



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

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

# **Sessions Schedule & Abstracts**

## **Програма & Резюмета**

*57<sup>th</sup> Annual Science Conference of Ruse University*

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

*57<sup>ma</sup> Годишна конференция на Русенския университет*

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

**2018 – Ruse, Razgrad, Silistra**

- SAT–LB-P-1-BFT(R)-02: Environmental Impact Assessments of Co2 Emissions of Pollutants Produced Using Different Transportation Fleets for “Green” Dairy Supply Chain Desing  
**Elisaveta Kirilova, Natasha Vaklieva-Bancheva, Rayka Vladova**
- SAT–LB-P-1-BFT(R)-03: Determination of Rheological Properties with Farinograf and Extensigraf of Bio-Fortified Flour  
**Marija Menkinoska, Tatjana Blazhevska, Viktorija Stamatovska, Vinko Stanoev**
- SAT–LB-P-1-BFT(R)-04: Preparation of Hydrophobins from the Fruit Body of Pleurotus Ostreatus by Extraction with Formic Acid  
**Nikita Khrapatov, Artyom Khludin, Boris Kolesnikov, Mark Shamtsyan**
- SAT–LB-P-1-BFT(R)-05: Syntesis of Mechatronic Function Modules Drives of Flow Technological Lines in Food Production  
**Liudmyla Kryvoplias-Volodina, Alexander Gavva, Taras Hnativ**
- SAT–LB-P-1-BFT(R)-06: Quality Characteristics of Honey: a Review  
**Tatjana Pavlova, Viktorija Stamatovska, Tatjana Kalevska, Ivan Dimov, Gjore Nakov**
- SAT–LB-P-1-BFT(R)-07: Basic Physico-Chemical Studies of Orange-Colored Snow (Razgrad, Bulgaria)  
**Sevdalina Todorova, Maria Stefanova, Maya Petkova, Emel Djevdetova**
- SAT–LB-P-1-BFT(R)-08: Comparison of Alexa 488, DR110 and Fitc Conjugated to Antibody for Microscopic Assays  
**Zlatina Becheva, Yavor Ivanov, Tzonka Godjevargova**
- SAT–LB-P-1-BFT(R)-09: Use of Essential Oils in Dairy Products 4. Essential Oil of Oregano (Origanum Vulgare L.)  
**Iliana Kostova, Stanka Damyanova, Nastya Ivanova, Albena Stoyanova**
- SAT–LB-P-1-BFT(R)-10: The Influence of Industrial and Facial Water on the Fifth Channel Situation in the City of Bitola  
**Tatjana Blazhevska, Marija Menkinoska, Gjore Nakov, Nastya Ivanova, Vinko Stanoev**
- SAT–LB-P-1-BFT(R)-11: Painting with Yeasts on Chromogenic Differential Culture Media  
**Sevdalina Todorova, Neli Atanasova, Mirela Atanasova**
- SAT–LB-P-1-BFT(R)-12: Determination of Fatty Acids Profile of Sunflower Oil Samples by Nmr 1h Spectroscopy  
**Svitlana Kovaleva, Larysa Mazur, Inna Hutsalo**
- SAT–LB-P-1-BFT(R)-13: Studying the Borrowing Structure of Bakery Products  
**Vitalii Rachok, Ivanna Telychkun, Volodymyr Telychkun**
- SAT–LB-P-1-BFT(R)-14: Influence of Electrophysical Water Treatment on the Process of Beverages Saturation  
**Oleksiy Nescuba, Olena Chepeliuk**
- SAT–LB-P-1-BFT(R)-15: Residues of Organophosphorus Pesticides in Apples  
**Vezirka Jankuloska, Ilija Karov, Gorica Pavlovska, Gjore Nakov**
- SAT–LB-P-1-BFT(R)-16: Investigation of the Uniformity of Distribution of Different Test Components After Following Discharge  
**Vitalii Rachok, Ivanna Telychkun, Yuliya Telychkun**
- SAT–LB-P-1-BFT(R)-17: Justification of the Production Lines Arrangement Based on Quantitative and Graphic Methods for Assessing the Level of Equipment Excellence  
**Volodymyr Vasylykov, Oleksander Chepeliuk, Olena Chepeliuk**

SAT-LB-P-1-BFT(R)-17

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## JUSTIFICATION OF THE PRODUCTION LINES ARRANGEMENT BASED ON QUANTITATIVE AND GRAPHIC METHODS FOR ASSESSING THE LEVEL OF EQUIPMENT EXCELLENCE

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***Abstract:** On the example of the estimation of technical and economic indicators of machines for the production of burger products, the task of multicriterial choice of equipment for the production lines arrangement by methods of spectral analysis, Pareto and distance to the goal was solved.*

*The method of spectral analysis, is based on the apparatus of dead-end tests, involves comparing all the definite combinations of features which describe the object, has advantages over Pareto and motion to the goal methods, because it provides a generalized mathematical evaluation of the specimens which are considered.*

*After analyzing five indicators (productivity, capacity, capacity of the feeding bin, weight, overall dimensions) of eight samples of equipment for the burger products production from different manufacturers, it has been established that according to the chosen parameters, the preference should be given to the machine Laminerva C/E 653 1ph.*

*The correctness of a decision primarily depends on the correct choice of indicators to be compared. In their composition, in the future it is necessary to include indicators of reliability and durability, as well as quality indicators of finished products.*

***Keywords:** Multicriterial choice, Method of spectral analysis, Pareto front, Eequipment.*

### REFERENCES

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