



**"ANGEL KANCHEV" UNIVERSITY OF RUSE
UNION OF SCIENTISTS - RUSE**

**РУСЕНСКИ УНИВЕРСИТЕТ "АНГЕЛ КЪНЧЕВ"
СЪЮЗ НА УЧЕНИТЕ - РУСЕ**



**61st Annual Science Conference
of Ruse University and Union of Scientists - Ruse
NEW INDUSTRIES, DIGITAL ECONOMY,
SOCIETY - PROJECTIONS OF THE FUTURE V**

**61 - ва годишна научна конференция
на Русенски университет и Съюз на учените — Русе
НОВИ ИНДУСТРИИ, ДИГИТАЛНА ИКОНОМИКА,
ОБЩЕСТВО — ПРОЕКЦИИ НА БЪДЕЩЕТО V**



**SESSIONS SCHEDULE & ABSTRACTS
ПРОГРАМА & РЕЗЮМЕТА**

**Silistra, Ruse, Razgrad
Силистра, Русе, Разград
2022**



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

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

Sessions Schedule & Abstracts

Програма & Резюме

61st Annual Science Conference of Ruse University
**NEW INDUSTRIES, DIGITAL ECONOMY, SOCIETY -
PROJECTIONS OF THE FUTURE V**

61^{ва} Годишна конференция на Русенския университет
**НОВИ ИНДУСТРИИ, ДИГИТАЛНА ИКОНОМИКА, ОБЩЕСТВО –
ПРОЕКЦИИ НА БЪДЕЩЕТО V**

2022 – Ruse, Razgrad, Silistra

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MESSAGE FROM ORGANIZING COMMITTEE

DEAR CONFERENCE PARTICIPANTS,

University of Ruse and Ruse Union of Scientists are pleased to welcome you to the 60st Annual International Scientific Conference, which is co-organized by our two institutions. Scientific and plenary sessions are being held respectively in Silistra, on October 27 in Ruse – on 28 and 29 October, and in Razgrad, on 4 and 5 November, 2022.

Theme of the conference is "New Industries, Digital Economy, Society - Projections of the Future" - V. The Booklet includes the program and the abstracts of 357 reports on research findings, which will be presented during all session days and other parallel forum events.

The authors will discuss their views in the following research areas and topics, which correspond to the conference theme:

Agricultural Machinery and Technologies; Maintenance and Reliability Thermal; Hydro- and Pneumatic Equipment; Ecology and Conservation; Chemical Technologies; Biotechnologies and Food Technologies; Mechanical Engineering and Machine-building Technologies; Electrical Engineering, Electronics and Automation; Communication Systems and Networks; Transport and Machine Science; Economics and Management; Intercultural and Political Communication; European studies and International Security; Social Work; Mathematics, Informatics and Physics; Pedagogy and Psychology; History, Ethnology and Folklore; Linguistics, Literature and Art Science; Health Promotion; Medical and Clinical Diagnostic Activities; Health Care; Law; National Security; Quality of Higher Education.

We hope, that scientific reports and discussions will contribute to deepening the understanding related to various aspects of regional economic transformation based on the implementation of innovative strategies and approaches to *New Industries, Digital Economy, Society* and its relations to business environment and quality of life. The use of systematic thinking is the basis for creating effective applications and best practices in many areas of science and its impact on business development and growth. Due to the great interest of scientists from home and abroad in the thematic fields under consideration in 2021, the topic "***New Industries, Digital Economy, Society - Projections of the Future - V***" is with a fifth edition this year. The projections of the future are threefold in finding lasting trends in the present.

Ruse Union of Scientists and Ruse University are characterized by their multi-profile identity, and they cover competencies in all above presented scientific fields and areas of research.

All abstracts with key words and reference lists in English, approved for presentation at the conference, meet the layout requirements and have been included in the **"Proceedings - Programme and Abstracts of the 61st ISC of the University of Ruse'22"**.

Pending nominations by the Programme Committee, up to two papers from each section (1 for one prominent scientist and 1 for a young scientist in the respective scientific field), which have been submitted and presented in English, will be published in Compiled works „Best Paper'22“, as hard copy and on-line on the Conference Website.

After double blind reviewing, papers with significant contribution will be offered for publishing in the journal „Reports of the Union of Scientists - Ruse“ and the thematic journals: „Journal of Entrepreneurship & Innovation“ - paper/on-line (ERICH+; EBSCO); „Agricultural, Forest and Transport Machinery and Technologies“ and „Pedagogical Innovations.“, distributed in many libraries in Bulgaria and abroad. After double blind reviewing, papers with significant contribution will be offered for publishing in the following journals, in compliance with their requirement for publishing: Transport problems (Scopus); Proceedings of ComSysTech'23 (Scopus, WoS), Serbian Journal of Management (Scopus, WoS).

All the remaining papers, successfully approved by international double blind reviewing, will be published in the respective series of Proceedings of the University of Ruse, vol. 61, 2022 and on-line on the Conference Website: ISSN 1311-3321 (print); ISSN 2535-1028 (CD-ROM); ISSN 2603-4123 (on-line).

The issue “Proceedings of the University of Ruse“ was included in the international ISSN database, available at <https://portal.issn.org/>.

The online edition of “Proceedings of the University of Ruse“ is registered in the portal ROAD scientific resources online open access.



The authors have one month to finalize their reports and summaries. The official collections of the conference will be posted online at: <http://conf.uni-ruse.bg>.

Welcome to the 61st edition of the URAK&USR International Conference - live on our campus and online in the hybrid sessions provided with links in the Program!

Welcome to University of Ruse! We wish you a pleasant and productive stay!

From the co-organizers of the Conference,

▪ **Chair:**

Acad. DTSc. Hristo Beloev, DHC mult., Academician of Bulgarian Academy of Sciences
RECTOR of the URAK and CHAIRPERSON of the USR

▪ **Scientific Secretary:**

Prof. Diana Antonova DSc, Head of a University Scientific Research Complex

NOVEMBER RESEARCH CONFERENCE IN RAZGRAD

Friday 04 November 2022

11:00 – 12:30	Opening, Plenary Session: Large Conference Room Session Chair: Assoc. Prof. Tsvetan Dimitrov, PhD Online Moderator: Assoc. Prof. Tsvetan Dimitrov, PhD; Tel. +359887631645 https://meet.uni-ruse.bg/b/fht-4en-rjy
FRI-LCR-KS(R)-01:	Prof. Irena Markovska, PhD Assen Zlatarov University, Burgas, Bulgaria Direct Synthesis of Graphene by Using Combined Electrolysis and Ultrasonic Methods
FRI-LCR-KS(R)-02:	Assoc. Prof. Daniel Pavlov, PhD University of Ruse “Angel Kanchev” The Intergenerational Family Businesses as an Instrument for Development of the Food Industry
13:30 – 14:30	Parallel Scientific Sessions: Large Conference Room
FRI-LCR-1-CT(R)	Chemical Technologies Session Chair: Temenuzhka Haralanova Online Moderator: Temenuzhka Haralanova, Tel. +359878557143 https://meet.uni-ruse.bg/b/fht-4en-rjy
FRI-LCR-1-CT(R)-01:	Obtaining Corundum Ceramic Samples Incorporated Graphene Margarita Georgieva, Adriana Georgieva, Fila Yovkova, K. Panayotova
FRI-LCR-1-CT(R)-02:	A New Look on the Titration of Weak Electrolytes: Application of the Least Squares Method Petar Petrov
14:30 – 15:30	Parallel Scientific Sessions: Large Conference Room
FRI-LCR-1-BFT(R)	Biotechnologies and Food Technologies Session Chair: Iliana Kostova, PhD Moderator: Iliana Kostova, PhD; Tel. +359886430204 https://meet.uni-ruse.bg/b/fht-4en-rjy
FRI-LCR-1-BFT(R)-01:	Fermentation Technology of Leaves for Flavored Drinks Halyna Dubova, Iryna Levchuk, Olha Holubets, Vladyslav Miroshnikov
FRI-LCR-1-BFT(R)-02:	Anethole Isolation, Synthesis, Properties: Brief Overview Martina Pencheva, Iliana Nikolova, Stanka Damyanova, Albena Stoyanova
FRI-LCR-1-BFT(R)-03:	Preservatives Used in Food–Antioxidant Activity and Spectra in UV-VIS, Mid-Infrared Region Mariya Georgieva
15:30 – 18:00	Parallel Poster Sessions: Large Conference Room
FRI-LCR-P-2-CT(R)	Chemical Technologies Session Chair: Tsvetan Dimitrov Moderator: Tsvetan Dimitrov; Tel. +359887631645 https://meet.uni-ruse.bg/b/fht-4en-rjy
FRI-LCR-P-2-CT(R)-01:	Possibilities for the Preparation of Ceramic Materials Incorporating Graphene and Carbonate Nanostructures Adriana Georgieva, Fila Yovkova, Krasi Panayotova, Margarita Georgieva, Mariela Minova
FRI-LCR-P-2-CT(R)-02:	Microwave-Assisted Synthesis of Cost-Effective and Environmentally Friendly Electrochemical Materials Ivelina Tsacheva, Mariela Dimitrova, Adriana Gigova, Ognyan Dimitrov, Dzhamal Uzun

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

FERMENTATION TECHNOLOGY OF LEAVES FOR FLAVORED DRINKS

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Abstract: The article shows options for fermenting tree leaves (cherries, apricots, lindens) and berries (raspberries, currants) to obtain aromatic raw materials. The purpose of the work is to obtain a modernized technology for obtaining dried leaves with the aroma of the corresponding fruits or berries. To obtain the desired effect, the possibility of using the tea leaf preparation technology was investigated. The basis of this technology consists of three main operations of preparing the leaf for drying - partial dehydration (or cold drying), leaf rolling, fermentation in a semi-closed vessel. Further, the fermented leaves are dried according to special regimes. It was found that the technology of tea leaf preparation can be successfully used for leaves of trees and berries. Three basic operations make it possible to obtain flavored leaves. The article shows that the intensity of the aroma and its correspondence to fruits and berries to a large extent depends on the conditions for the first operation - cold drying. The result of the study is that partial dehydration can be successfully carried out in two ways - classical (sheet packing in fabric layers) and modernized (freezing followed by defrosting). The upgraded method makes it possible to simplify the subsequent twisting operation and shorten the duration of fermentation. Drinks from the leaves after fermentation are an alternative or a good addition to herbal teas.

Keywords: Fruit Tree Leaves, Berry Leaves, Fermentation, Tannins, Aroma

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