PROCEEDINGS OF UZBEKISTAN–CHINA INTERNATIONAL SYMPOSIUM ON "CURRENT ISSUES IN THE CULTIVATION AND UTILIZATION OF MEDICINAL PLANTS"

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PROGRAM

OF THE UZBEKISTAN–CHINA INTERNATIONAL SYMPOSIUM ON "CURRENT ISSUES IN THE CULTIVATION AND UTILIZATION OF MEDICINAL PLANTS"

ABOUT THE SYMPOSIUM

The Uzbekistan–China International Symposium on "Current Issues in the Cultivation and Utilization of Medicinal Plants" serves as a prestigious integration platform for establishing experience exchange between various scientific schools and young scientists, developing fundamental and practical solutions to existing systemic problems, and forming new joint transboundary scientific projects.

The main objective of the international symposium is to create a high-tech international platform that serves to elevate the integration between leading scientists, researchers, and brand manufacturers (the business sector) of Uzbekistan and the People's Republic of China in the fields of medicinal plant cultivation, advanced raw material processing, phytochemistry, biotechnology, agrotechnology, food safety, traditional medicine, and folk medicine to a qualitatively new level.

The priority conceptual task of the symposium is to systematically form and scientifically substantiate the vertical integration in the medicinal plant phyto-industry from raw material cultivation to the production of ready high-value products, specifically the complete value chain principle: "Seed-to-Market".

SYMPOSIUM ORGANIZERS:

- Ministry of Higher Education, Science and Innovations of the Republic of Uzbekistan;
- "Uzkimyosanoat" Joint-Stock Company (Tashkent, Uzbekistan);
- Tashkent Institute of Chemical Technology (Tashkent, Uzbekistan);
- Scientific and Production Center for the Cultivation and Processing of Medicinal Plants (Tashkent, Uzbekistan);
- Shandong University of Technology (Zibo, Shandong, China);
- Qilu University of Technology (Shandong Academy of Sciences), Faculty of Chemistry and Pharmacy, Shandong Analysis and Test Center (Jinan, Shandong, China);
- Institute of Ecology, Shandong Academy of Sciences (Qilu University of Technology, Jinan, China);
- Nanjing Agricultural University (College of Plant Protection, Nanjing, China);
- Nankai University (School of Life Sciences, Tianjin, China);
- Northwest A&F University (College of Natural Resources and Environment, Yangling, China);
- Tashkent State Agrarian University (Tashkent, Uzbekistan);
- Uzbek–Chinese Joint Laboratory of "Soil Eco Biotechnology" (Uzbekistan- China).

PARTNER ORGANIZATIONS

- ✓ Committee on Science, Education and Health of the Senate of the Oliy Majlis of the Republic of Uzbekistan;
- ✓ Academy of Sciences of the Republic of Uzbekistan;
- ✓ Uzbekistan Food Industry Association;
- ✓ "Uzyogmoysanoat" Association;
- ✓ The association of traditional medicine of Uzbekistan;
- ✓ "SHANAZ" LLC;
- ✓ "Health Line" LLC;

INTERNATIONAL ORGANIZATIONS

- ✓ Dresden University of Technology (Germany);
- ✓ Mendeleev University of Chemical Technology of Russia;
- ✓ M.Auezov South Kazakhstan University;
- ✓ "Republican Collection of Microorganisms" LLP (Kazakhstan);
- ✓ Integral University Lucknow, India;
- ✓ Óbuda University, Hungary;
- ✓ Jiangsu University (China).

- ✓ “Zuma Pharma” LLC;
- ✓ “Laxisam Pharmaceuticals” LLC;
- ✓ “Bayan Medical” LLC.

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29. **Fajun Chen** – Professor at the Nanjing Agricultural University (China);
30. **Bakhytzhan Kedelbaev** – Professor at the M.Auezov South Kazakhstan Research University;
31. **Aslan Temirkhanov** – Scientific Secretary, Republican Collection of Microorganisms (Kazakhstan);
32. **Zhadyrassyn Nurbekova** - Associate professor, L.N.Gumilyov ENU (Kazakhstan);
33. **Farooqui Alvina** - Head Department of Bioengineering, Integral University, professor (India);
34. **Mukesh Kumar Awasthi** - Associate Professor, Northwest A&F University (China);
35. **Viktor Mechtcherine** – Director of the Institute of Construction Materials, Technische Universität Dresden (Germany).

Organizing Committee Members of the Uzbekistan–China International Symposium on "Current Issues in the Cultivation and Utilization of Medicinal Plants"

Scientific Sessions

Session 1. Biodiversity, Gene Pool, and Modern Agrotechnologies of Medicinal Plants

Chair: Professor **B.E.Izbasarov** – Director General of the Scientific and Production Center for the Cultivation and Processing of Medicinal Plants (Uzbekistan);

Co-Chair: Associate Professor **G'.A. Nazarov** – Head of the Department of Biotechnology, TICT (Uzbekistan);

Secretary: X.O.Abdullayev – Senior Lecturer at the Department of Biotechnology, TICT (Uzbekistan);

Session 2. Phytochemistry, Biotransformation, and Advanced Processing of Medicinal Plant Raw Materials

Chair: Professor **Shanshan Wang -** Deputy Party Secretary of the Faculty of Chemistry and Pharmacy, Qilu University of Technology (SDAS, China);

Co-Chair: Professor A.T.Ruziboyev – Head of the Department of Food and Perfume-Cosmetic Products Technology, professor, TICT, (Uzbekistan);

Secretary: A.Sh.Otajonov – Senior Lecturer at the Department of Biotechnology, TICT (Uzbekistan);

Session 3. Current Issues in the Utilization of Medicinal Plants in Pharmacology, Medicine, and the Food Industry

Chair: Professor **Fangling Du** – Party Secretary of Shandong University of Technology (China);

Co-Chair: Dr. **U.J.Ishimov** – Leading Researcher at the Institute of Bioorganic Chemistry named after Academician O.Sadikov of the Academy of Sciences of the Republic of Uzbekistan, PhD (Uzbekistan);

Secretary: Dr. **D.Sh.Matchanova** – Senior Lecturer at the Department of Biotechnology, TICT (Uzbekistan);

Session 4. Economics of Phyto-Industry, Marketing, and Prospects for International Cooperation

Chair: Professor **Jin-Hua Xiao** – Professor of Nankai University (China);

Co-Chair: Professor **S.S.Ravshanov** – Professor of the Department of Biotechnology, TICT (Uzbekistan);

Secretary: F.B.Abdullayeva – Senior Lecturer at the Department of Biotechnology, TICT (Uzbekistan);

Symposium Moderators

Khayrulla Pulatov - Professor of the Department of Industrial Ecology and Green Technologies, TICT.

Shakhnozakhon Salijonova - Associate Professor of the Department of Technology of Food and Perfumery-Cosmetic Products, DSc, TICT.

SYMPOSIUM FORMAT

The symposium will feature a diverse range of formats, including an opening ceremony followed by plenary, keynote, and invited lectures. Parallel sessions will host oral presentations, while poster presentations will be exhibited throughout the workshop. The symposium will be conducted in a hybrid (both offline and online) format. **Link for online participation**: https://voovmeeting.com/dm/s4yb4fw9VBHJ #Tencent Meeting：859-0871-0474

Official Languages

Uzbek and English is used as the official language at the symposium.

Important dates

18/06/2026	Welcome + Opening ceremony + Keynote lectures + Parallel sessions
19/06/2026	Keynote lectures + Parallel sessions + Closing ceremony + *Excursion in Tashkent *(optional and pay fee)*

***Inquiry or cancellation should be sent to**: *e-mail*: kdtinfo659@gmail.com; *Telegram*: @KDT0803

Session 2. Phytochemistry, Biotransformation, and

Advanced Processing of Medicinal Plant Raw Materials

DEVELOPMENT AND VALIDATION OF METHOD TO QUANTIFY PIPERINE IN BLACK PEPPER SEED

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Place of study: Department of Chemistry, Central Instrumentation Facility (CIF), Integral Centre of Excellence for Interdisciplinary Research (ICEIR), Integral University Lucknow-226026, Uttar Pradesh, India

Abstract. This study describes the development and validation of a rapid, highly sensitive and selective liquid chromatography-tandem mass spectrometry (LC-MS/MS) method for the precise isolation and quantification of piperine from black pepper (Piper nigrum L.) seeds. The extraction process was optimized by subjecting 10g of finely

The analytical data demonstrated that biologically active unsaponifiable substances constituted a substantial proportion 42.35% of the NL fraction, accounting for approximately one-half of the total NL mass and imparting a characteristic orange-red coloration. UV analysis of the unsaponifiable fraction indicated that the carotenoid content reached 4958 mg% (4.9%). To determine the composition of the UC , the fraction was separated into several subfractions by PTLC on silica gel. The results showed that carotenoids and apocarotenoids (predominantly β-carotene) represented the major constituents of the UC fraction in *C. sativus*stamens, amounting to 66.19 mg%. The UVspectr UCs fraction showed λmax 260, 420, 425, 440, 470, and 320–355 nm, corresponding to β-carotene-group carotenoids (420, 425, 440, and 470 nm) [2] and crocin-group apocarotenoids of saffron (260 and 320–355 nm) [3].

Conclusion. The present study demonstrated that *Crocus sativus* stamens contain substantial amounts of neutral and polar lipids, with a remarkably high proportion of biologically active unsaponifiable compounds. Carotenoids and apocarotenoids were identified as the predominant constituents of the unsaponifiable fraction. The high concentration of these compounds, together with their known biological activities, indicates that *C. sativus* stamens represent a valuable and underutilized secondary raw material. Their exploitation could contribute to the sustainable utilization of saffron processing by-products and provide an alternative source of natural carotenoids for food, pharmaceutical, and cosmetic industries.

References.

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COMPARATIVE INVESTIGATION OF TiO_2, CuS AND TiO_2/CuS NANOMATERIALS TOWARD EFFICIENT SOLAR ENERGY HARVESTING

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Abstract. The synthesis, characterization and optimization of TiO_2, CuS and TiO_2/CuS composite nanomaterials for enhancing solar energy conversion efficiency was investigated. TiO_2 nanomaterials were developed using sol-gel method. CuS nanomaterials were synthesized using hydrothermal method. Then TiO_2/CuS composite nanomaterials were synthesized. These samples were analysed for their electrochemical, optical, morphological and structural properties.

X-ray diffraction and field emission scanning electron microscopy confirmed the successful formation of desired crystal phases and surface morphologies. Optical characterization revealed promising band gap energies and light absorption capabilities while electrochemical tests indicated improved photoactivity and stability.

The comparative study of TiO_2, CuS and TiO_2/CuS composite nanomaterials shows improved results in the composite form.

Keywords: Composite nanomaterials; sol-gel method; hydrothermal method; band gap; X-ray diffraction studies.

CARBOHYDRATE-BASED NANOCOMPOSITE HYDROGEL BIOMATERIALS: AN OVERVIEW OF THEIR SYNTHESIS AND FUTURE PERSPECTIVES

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Abstract. In recent years, medicine has evolved rapidly with the rise of nanocomposite hydrogel biomaterials, which offer significant potential for a large range of biomedical applications. Nanocomposite hydrogels based on carbohydrates represent an evolved and good class of biomaterials in modern biomedical science. These hydrogels are primarily integrated using carbohydrate-based polymers such as cellulose, chitosan, and alginate, which are biocompatible, biodegradable, and renewable. However, these materials alone often have limitations, such as fragility and rapid degradation. To overcome these issues, researchers combine them with nanoparticles to form nanocomposite hydrogels. Mixing these materials makes them stronger, tougher, and more useful. Because they function as the body's natural building blocks, they blend seamlessly with real tissues. As a result, they are highly useful in applications like drug delivery, tissue engineering, wound healing, and degenerative medicine. These materials are great because they can release medicine exactly where and when it is needed. Scientists have recently upgraded how these are made—using special freezing methods,

	o‘simliklar tarkibidagi spirtlarni alkinillash asosida biologik foal moddalar olish	
147.	**Urinboyeva N.O., Imomova M.Y.** *Cynodon dactylon (L.) Pers.* ning biologik faol xususiyatlari va amaliy qo‘llanilish istiqbollari.	
148.	**Akanksha Tiwari., Malik Nasibullah.** Current scenario and challenges in cultivation of medicinal and aromatic plants	
149.	**Jamal Akhtar Ansari., Anjali Chaturvedi.** Current issues of using medicinal plants in pharmacology, medicines and food industry	
150.	**Jabborov T.K., Kurbanov.N.M., Jabborov.I.T., Siddiqov.M.Z.** Creation of an intelligent drying system controlled by artificial intelligence elements and study of its impact on the quality of functional food products.	
151.	**Xamidov A.F., Ramazonov N.Sh.** *Cousinia microcarpa* Boiss. o‘simligi ildizining fitokimyoviy tarkibi	
152.	**Makhmudova Sh.R., Yuldasheva N.K., Nishanbaev S.Z., Gusakova S.D.** Compositional analysis of the unsaponifiable compoundsof *crocus sativus* stamens	
153.	**Kishor Nand., Mohd Arsh Khan., Firoj Hassan and Rashid Tanveer.** Comparative Investigation of TiO_2, CuS and TiO_2/CuS Nanomaterials toward Efficient Solar Energy Harvesting	
154.	**Spursh Srivastava., Tahmeena Khan., Abdul Rahman Khan.** Carbohydrate-based nanocomposite hydrogel biomaterials: an overview of their synthesis and future perspectives	
155.	**Umurkulova F.S., Misirova S.A.** Bug‘doy kepagi va Isiriq ekstraktlari asosida biologik faol kompleks olish va uning xususiyatlarini baholash	
156.	**Umurkulova F.S., Misirova S.A.** Bug‘doy kepagi gidrolizati hamda Moringa bargi ekstraktining mikroorganizmlarga qarshi faolligini tadqiq qilish.	
157.	**Umurkulova F.S., Misirova S.A.** Bug’doy kepagi gidrolizatiga dorivor o’simlik ekstraktlarini qo’shish orqali biologik faol kompozitsiya yaratish va uning antioksidant faolligini o’rganish	
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160.	**Abdurazzoqova Sh.U, Pattaeva M.A., Rasulov B.A., Samadiy S.A.**· *Bacillius mycoides_ bm2024* shtammining turli uglerod manbalarida va vadarod ko’rsatgichlarida o’sishi va fuzarium turlariga nisbatan antoganistik faolligini o’rganish	
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162.	**Ziyadullayev M.E., Suyunov S.A., Nurmanov S.E.,**	