

**ACADEMY OF SCIENCES
OF THE REPUBLIC OF UZBEKISTAN**

**S.Yu. Yunusov Institute of the
Chemistry of Plant Substances**



Journal of Chemistry of Natural Compounds

Society of Chemists of Uzbekistan

**"ACTUAL PROBLEMS OF THE CHEMISTRY OF
NATURAL COMPOUNDS»**

SCIENTIFIC CONFERENCE OF YOUNG SCIENTISTS

Dedicated to the memory
of Academician Sabir Yunusovich Yunusov

March 17, 2022

TASHKENT



**ACADEMICIAN
SABIR YUNUSOVICH YUNUSOV
(1909-1995)**

Topics OF CONFERENCE

1. Chemistry, technology and pharmacology of natural compounds.
2. Biotechnology and organic chemistry.

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17 March

- 8.00–9.00 **Registration of the participants of the Conference**
(Acad. S.Yu. Yunusov Institute of the Chemistry of Plant Substances,
Tashkent, M. Ulugbek st., 77)
- 9.00–9.10 **OPENING CEREMONY**
**Welcome speech of director of the Institute of the Chemistry of
Plant Substances**
Prof. Sh. Sh. Sagdullaev
- 9.10–10.00 **MEMORIES OF THE LIFE AND SCIENTIFIC ACTIVITY
OF ACADEMICIAN S.YU. YUNUSOV**
Doc. S.Z. Nishanbaev

ORAL PRESENTATIONS

Chairmen: Prof. Batirov E.Kh.

Secretary: Turaeva S.M.

- 10.00–10.15 **B.S. Okhundedaev** Flavonoids of plants of the genus *Artemisia*.
Flavones and sesquiterpene lactone from *Artemisia juncea*.
- 10.15–10.30 **A.U. Ubaydullaev.** Electrophilic exchange reactions of the
quinoline alkaloid haplopyhilidine
- 10.30–10.45 **U.B. Khamidova.** 5-amino-1,3,4-thiadiazolthion derivatives as
potential anti-cancer agents
- 10.45–11.00 **N.K.Usmanova.** Chemical components of the medical plant
Melilotus officinalis
- 11.00–11.15 **L. Kozinskaya.** Mechanism of the formation of indolcrown ethers
by the bartoli-grignard reaction
- 11.15–11.30 **D.Z. Azizov.** Structure and biological activity of
arabimogalactans of *Ferula kuhistanica* and *Ferula tenuisecta*
- 11.30–11.45 **A.U.Berdiev.** Synthesis of 4-substituted-5,6-polymethylenethieno
[2,3- d]pyrimidines
- 12.00–12.15 **Z.F.Nuriddinov.** Study of Separation Conditions and Biological
Evaluation of Natural Compounds from *Echis carinatus* Snake
Venom
- 12.15–12.30 **Sh.Sh. Khusenova.** Determination of the quantity of the total
flavonoids in dry diabderm extract.
- 12.30–12.45 **Q.G. Khajibayev.** The study of the amount of organic elements in
the cyst of *Artemia* of the Aral Sea
- 12.45–13.00 **M.E. Ziyadullaev.** N-(4-oxo-3,4-dihydroquinazolin-6-yl) acetamide
synthesis and biological activity
- 13.00–14.00 **Break and POSTER PRESENTATIONS**

ORAL PRESENTATIONS

Chairmen: prof. Rakhmanberdieva R.K.

Secretary: Siddikov D.R.

- 14.00–14.15 **A.Sh. Yashinov.** HIV-RT Inhibiting Peptides of the *Bufo viridis* Toad Venom
- 14.30–14.45 **A.R. Khurramov.** Gracillin and 5- α -hydroxylaxogemin from the *Saponaria officinalis*
- 15.00–15.15 **S.M.Allabergenova.** Synthesis of 2-ethyl-3-methyl(ethyl) quinazoline-4-one sulphoamides
- 15.15–15.30 **A.A. Makhnyov.** Modern principles for the isolation of nucleic acids from biological samples
- 15.30–15.45 **Z.Sh.Mukhidova.** Pesticide activity of natural terpenoids
- 15.45–16.00 **A.A. Siddikova.** Pectin substances of *Scutellaria comosa* and their anti-ulcer activity.
- 16.00–16.15 **M.U.Turanazarov.** Isolation and Purification of a novel peptide from the *Buthus eupeus* venom
- 16.15–16.30 **U.Yu. Yusupova.** Biological active compounds from aerial part of *Silene tomentella*.
- 16.30–16.45 **S.S. Ziyavitdenova** Study of anticancer activity of decoglitiz preparation on solid ehrlich tumor
- 16.45–17.00 AWARDS CEREMONY**

ORAL PRESENTATIONS

STUDIES OF THE PHYSICOCHEMICAL PROPERTIES OF BIOPOLYMERS CHITIN AND CHITOSAN APIS MELLIFERA

F.M. Nurutdinova - Doctor of philosophy (PhD) technical science,

Docent of Bukhara State Unlversity, e-mail: parviz.feruza83@mail.ru

D.A. Khazratova - Doctor of philosophy (PhD) chemical science.

The polysaccharide nature of these polymers determines their affinity for living organisms, and the presence of reactive functional groups provides the possiblity of a variety of chemical modifications that enhance their inherent properties or impart new ones in accordance with the requirements. The use of chitosan, a non-toxic and non-allergenic natural biopolymer that is biocompatible with the human body, is promising. The undeniable advantages of chitosan include its perfect safety for humans and the environment. Under natural conditions, it breaks down completely, that is, it is an environmentally friendly product. The physicochemical properties of chitin and chitosan synthesized from the dead bee *Apis Mellifera* were studied by taking IR spectra on an IR Fourier spectrometer Nicoleti S 50 (Thermo Fisher Scientific, USA). An X-ray diffractogram of chitosan obtained by deacetylation of chitin was also obtained and analyzed. X-ray diffraction studies show that the rate of crystallization of chitosan and chitin molecules decreases when deacetylation (DA) is carried out with different percentages (DA-8%, 36%, 57%, 81%), especially when deacetylation reaches 36%, a decrease in the level of three-dimensional distribution was observed. From the structural molecular and X-ray data, it can be concluded that the deacetylation of chitin transforms the form of chitosan, that is, the molecular structures, and the chitosan crystals differ from the molecular structures and crystals of chitin. It can be thought of as copolymers of chitin and chitosan. The viscosity of chitosan solutions was measured in an Ubbelohde viscometer with a capillary diameter of 0.5 mm and using 0.2 M acetic acid solutions and 0.1 M sodium acetate solution as a solvent in a 1:1 ratio by volume (solvent flow time 22 sec) at temperature 30 0C. The moisture content of the samples was determined on a METTLERTOLEDOLP16 setup according to the instrument's operating instructions. The method is based on drying the sample by heating to constant weight. The mass fraction of ash was determined by burning the sample and weighing the residue.

Some physicochemical parameters of chitosan isolated from dead bees

Name	Appearance	Humidity, %	Viscosity, Pa*s 10 ⁻³	Total nitrogen content, %	Molecular mass, kDa
Chitosan, from dead bees	beige	10,3	3,28	8,31	162