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 orgamic 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 A*rtemisia juncea.*

10.15–10.30 **A.U. Ubaydullaev.** Electrophilic exchange reactions of the quinoline alkaloid haplopyhilidime

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.** Mechamism of the formation of indolcrown ethers by the bartoli-grignard reaction

11.15–11.30 **D.Z. Azizov.** Structure and biological activity of arabinogalactans of Ferula kuhistamca 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 decoglitz preparation on solid ehrlich tumor

16.45–17.00 AWARDS CEREMONY

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 possibllity 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