

satisfaction of the students of our university with the provision of communication technologies, it is necessary to continue working to improve the sources and means of communication for students and teachers for closer interaction and feedback.

LITERATURE

1. Применение ЭУМК по биологической химии на базе Moodle в учебном процессе в медицинском вузе / А. Н. Коваль, И. А. Никитина, М. В. Громыко [и др.]. // Экологическое образование и устойчивое развитие. Состояние, цели, проблемы и перспективы : Материалы международной научно-методической конференции, Минск, 02–03 марта 2023 года. – Минск: Международный государственный экологический институт имени А. Д. Сахарова БГУ, 2023. – С. 201–202.
2. Применение в образовательном процессе электронного учебно-методического комплекса и повышение успеваемости студентов / Н. С. Мышковец, И. А. Никитина, А. Н. Коваль [и др.]. // Модернизация высшего образования в сторону цифровизации: проблемы, решения, перспективы : Сборник материалов республиканской научно-практической конференции, Гродно, 02 марта 2023 года. – Гродно: Гродненский государственный медицинский университет, 2023. – С. 70–73.
3. Сборник тестовых заданий по биологической химии : Учебно-методическое пособие для студентов 2 курса всех факультетов учреждений высшего медицинского образования / И. А. Никитина, А. Н. Коваль, О. С. Логвинович [и др.]. – Гомель : ГомГМУ, 2023. – 262 с.
4. Гомельский государственный медицинский университет : [сайт]. Гомель, 2003–2025. – URL: www.gsmu.by (дата обращения: 15.03.2025)
5. Громыко, М. В. Психолого-педагогическая характеристика обучаемого как способ изучения идентичности / М. В. Громыко // Семья в современном мире: междисциплинарный подход : материалы межрегиональной научно-практической конференции, Кемерово, 06 мая 2024 года. – Кемерово : Кемеровский государственный медицинский университет, 2024. – С. 42–48.
6. Формирование компетентности студентов факультета по подготовке специалистов для зарубежных стран по биологической химии / А. И. Грицук, И. А. Никитина, О. С. Логвинович [и др.]. // Мультидисциплинарный подход к диагностике и лечению коморбидной патологии : сборник научных статей Республиканской научно-практической конференции с международным участием, Гомель, 29–30 ноября 2018 года. – Гомель: ГомГМУ, 2018. – С. 125–128.

УДК: 615.849.1:532.528

N. R. Musanova, A. A. Ubaidolla

Scientific supervisor: Dr. of Technical Sciences, Professor M. M. Mayemerov, academician, honored inventor of the Republic of Kazakhstan, head of the Scientific Research Institute of Ion-Ozone Electro-Nano-Torsion Engineering Medicine

Educational Establishment

«Kazakh National University named after S. Asfendiyarov»

Almaty, Republic of Kazakhstan

PROSPECTS OF THE FUTURE IN THE FIELD OF SANI TATION AND ION-OZONE INSTALLATIONS

Introduction

Modern medical treatment technologies are evolving at a faster pace than the development of devices required for their implementation, creating a disparity between the adoption of innovations and the availability of appropriate equipment. Methods such as ozone therapy, molecular oxygen, and torsion field nanotechnologies offer promising opportunities for transformative advancements in the treatment of chronic diseases, including diabetes and cancer. These approaches contribute to improved blood circulation, enhanced metabolism, strengthened immunity, and a significant reduction in adverse effects on the body. However, the lack of public awareness and understanding of these methods highlights the need for further scientific research. In the context of worsening environmental conditions and the increasing prevalence of chronic diseases, these technologies could become essential tools for maintaining health and preventing illnesses, playing a key role in both treatment and prevention strategies.

Goal

The development of new physiotherapy methods involves a comprehensive study and evaluation of the effectiveness of ion-ozone and electro-nano torsion therapy as a promising direction in medicine. This approach integrates ozone therapy, ion therapy, ion-ozone therapy, and the influence of microleptons from torsion fields, offering new opportunities for treating chronic diseases. Special emphasis is placed on integrating innovative solutions to enhance the effectiveness of therapy for arthritis, osteochondrosis, diabetes, and oncological diseases. Additionally, the impact of these methods on blood circulation, metabolism, and the immune system is studied, allowing for significant therapeutic benefits without adverse side effects. Furthermore, research explores the effects of ozone, molecular and atomic oxygen ions, and microleptons from torsion fields on the environment and human health, opening prospects for their safe and effective application in medicine.

Material and methods of research

This study focuses on a comprehensive analysis and experimental evaluation of the effectiveness of ion-ozone and electro-nano torsion therapy, considering the impact of bipolar electric current. The initial phase involved a detailed review of scientific sources covering ozone therapy, ion therapy, combined ion-ozone exposure methods, and microleptons from torsion fields, which formed the foundation for further practical research. During the experiments, specialized devices generating ion-ozone mixtures and torsion emissions were utilized, with an analysis of parameters such as ozone concentration, molecular oxygen ions, and the characteristics of electromagnetic and torsion fields. Additionally, the influence of these technologies on physiological processes, including circulatory function, metabolism, and immune response, was studied using laboratory tests such as biochemical analyses and immunoglobulin assessment. Simultaneously, environmental monitoring was conducted to evaluate the impact of these technologies on the ecosystem, including vegetation and air quality. Clinical trials were based on assessing changes in patients' physical condition, pain dynamics, and psycho-emotional well-being using specialized quality-of-life scales.

The results of the research and their discussion

The study results confirmed that the generation of ozone, molecular oxygen ions, and microleptons using an ion-ozone torsion system enables their effective application in medical and preventive procedures. Due to its redox properties, ozone actively neutralizes pathogenic microorganisms such as bacteria and viruses while preserving beneficial microflora, as it has a higher energy potential. Moreover, molecular ozone demonstrates increased stability and safety in use. Microleptons play a crucial role in this process by enhancing the interaction of components within the ion-ozone torsion mixture, thereby increasing the overall therapeutic effect. Ion-ozonator torsion devices have significant potential in both medicine and environmental research, offering effective treatment for a wide range of diseases. This technology integrates several methods, including ion therapy, ozone therapy, combined ion-ozone exposure, electrotherapy, and torsion radiation. The comprehensive application of these approaches contributes to improved blood circulation, normalization of metabolic processes, and strengthening of the immune system, making the therapy highly effective.

Conclusions

Ion-ozonator torsion installations hold immense potential for integration into healthcare, medical practice, pharmaceuticals, as well as human and environmental ecology, opening new horizons for the treatment and prevention of various diseases. These innovative technologies, based on the synthesis of ozone, molecular and atomic oxygen ions, as well as microleptons of torsion fields, demonstrate high efficiency in eliminating pathogenic microorganisms,

improving metabolic processes, normalizing blood circulation, and strengthening the immune system. Due to these properties, they represent a promising approach for the therapy of diseases such as diabetes, tuberculosis, oncology, arthritis, and osteochondrosis. A key advantage of this technology lies in the ability of microleptons from torsion radiation to record and transfer therapeutic properties between objects, making these installations unique and highly effective. However, research has identified potential risks associated with exceeding an electric current frequency of 50 kHz during oxygen ion synthesis. This may lead to the formation of ultraviolet and X-ray radiation, as well as harmful chemical compounds that pose health hazards. Therefore, strict control over the technical parameters of the equipment and compliance with established safety standards are essential. Beyond medical applications, ion-ozonator torsion installations positively impact the environment by enhancing plant growth and reducing the need for water and fertilizers. This opens up broad prospects for their use in agriculture, the agro-industrial complex, the food industry, and processing sectors. In conclusion, ion-ozonator torsion technologies represent an advanced and promising method that can make a significant contribution to healthcare, medicine, pharmaceuticals, and ecology. For their safe and effective implementation, further research, technological optimization, and strict operational control are necessary to fully unlock their potential while minimizing possible risks.

LITERATURE

1. Air ionization and its practical application // School Science. – URL: <https://school-science.ru> (date of access : 05.11.2024).
2. Mayemerov, M. M. technology and expert essence / M. M. Mayemerov, K. S. Kulazhanov, A. I. Iztaev // Problems of technical and legal expertise: materials of the international scientific and practical seminar, Almaty, 30–31 may, 2001. – Almaty, 2001. – P. 63–66.
3. Zhigalov, V. A. “Characteristic effects of non-electromagnetic radiation” : [web]. – Second Physics, 2011. – URL: https://second-physics.ru/work/zhigalov_effects.pdf (date of access: 12.12.2024).
4. Savelyev, G. F. Microleptons, Microleptonic Fields, Microleptonic Interactions / G. F. Savelyev. – Moscow : Nauka, 2017. – 59 p.
5. Havrysh, O. H. About physical nature of the biological field / O. H. Havrysh // Conference on physics of biological systems, Kyiv, 6–10 of september 1998 / Bookofabstracts. – Kyiv, 1998. – 113 p.

УДК 577.1:378.6-057.875

P. Supun Hasaranga Perera, K. A. Yasiru Hasaral Kodagoda

Scientific supervisor: Senior Lecturer M. V. Gromyko

Educational Establishment

«Gomel State Medical University»

Gomel, Republic of Belarus

FROM FORMULA TO CONCEPTS: PROBLEMS, WHICH WAITS FOR STUDENTS IN BIOCHEMISTRY

Introduction

In the Eastern countries, public universities provide opportunities for higher education. However, due to limited opportunities in public universities, universities some from qualified students Not will be able to receive education V state University. Hence, such students can choose for receipt higher education private universities, foreign universities and other alternative routes to higher or professional education [1].

Higher educational institutions of Belarus provide export of educational services to foreign students, while it is important to understand that such students face enormous difficulties in adapting to the educational process (language barrier, different system of knowledge assessment,