



**O‘ZBEKISTON RESPUBLIKASI OLIY TALIM,
FAN VA INNOVATSIYALAR VAZIRLIGI
FARG‘ONA DAVLAT UNIVERSITETI**



**BIOLOGIK TADQIQOTLARDA ZAMONAVIY
YONDOSHUVLARNING DOLZARB
MASALALARI**
mavzusidagi xalqaro ilmiy-amaliy konferensiya
MATERIALLARI

МАТЕРИАЛЫ
международной научно-практической конференции
**АКТУАЛЬНЫЕ ВОПРОСЫ СОВРЕМЕННЫХ
ПОДХОДОВ В БИОЛОГИЧЕСКИХ
ИССЛЕДОВАНИЯХ**

MATERIALS
of the international scientific and practical conference
**ACTUAL ISSUES OF MODERN APPROACHES IN
BIOLOGICAL RESEARCH**

**Farg‘ona-2024
23-24-may**

KIMYO O'QITUVCHISINING MASHG'ULOT UCHUN NAZARIY TASHKIL ETUVCHILAR

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Bugungi kunga kelib, ta'lim xizmatlarining zamonaviy bozori talablari o'qituvchiga o'zing o'qituvchilik faoliyatida axborot - kommunikatsion texnologiyalar(AKT) elementlaridan foydalanish, ishlatish va yetkazib berish, joylashtirish, masofadan o'qitish, internet materiallariga asoslanish, virtual laboratoriyalarni ishlatish va mashg'ulotlarni maksimal darajada yangi ma'lumotlar bilan boyitish kabi talablarni qo'ymoqda. Bunda yingilangan pedagogic texnologiyalar elementlari ham alohida o'rin egallaydi [1].

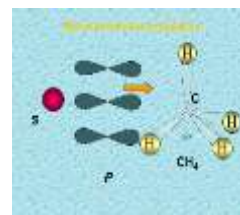
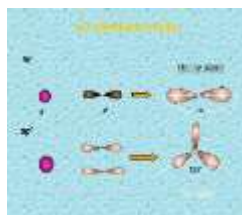
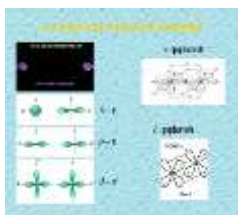
Shu qilib, nazariy mashg'ulotlarda multimedia texnologiyalaridan foydalanish, fanni o'qitishda namoyish qilish imkoniyatini kengaytirish imkonini beradi [2]. Nazariy material Power Point ko'rinishida tadqiqot qilinadi, u o'z navbatida ekranga berilayotgan axborotlarni kuchaytirish imkonini yaratadi, bu turli tartibdagi animatsiyalarni ishlatish bilan olib boriladi. Maruza mashg'ulotlarida foydalaniladigan illyustratsiyali material, o'z ichiga chizmalar, grafik organayzerlar, rasmlar, vedioroliklar, animatsiyalarni oladi, bu o'z navbatida mashg'ulotni ko'rgazmali, ma'lumotlarga boy, turli xilma-xilliklarga ega bo'lishiga, materialni samarali o'zlashtirilishiga yordam beradi [2].



Flash- va VRML shakllar bilan boy bo'lgan illyustratsiyalarni, internet – resurslarda, elektron darsliklar va o'quv qo'llanmalarda ishlatish, nazariy mashg'ulotda atomar bosqichda boradigan jarayonga qaraganday qarashga olib keladi Nazariy mashg'ulotlarda Flash va VRML modellari bilan boyitilgan tasvirlangan internet resurslari va elektron darsliklardan foydalanish sodir bo'layotgan jarayonlarni atomar bosqichda ko'rib chiqishga imkon beradi, bu esa ushbu jarayonlarning tasvirni idrok etish va tushunishga yordam beradi.

Nazariy mashg'ulotlarda kimyoviy tajribalarning videoyozuvlari ko'rsatilishi, ularni ma'lum bir sabablarga ko'ra laboratoriya mashg'ulotlarida tajriba o'tkazishni imkoni bo'lmaganda(o'ta zaharli moddalar, qimmatbaho metallar va boshqalar) amalga oshiriladi.

Virtual laboratoriyalar institut laboratoriyalari sharoitida o'tkazib bo'lmaydigan tajribalarni ham ko'rsatish imkonini beradi[16]. Ular kimyoviy shisha idishlar, tajribaning mohiyati, ishlatiladigan asboblardan kerakli natijaga erishish uchun zarur harakatlar zanjiri haqida foydali ma'lumotlarni o'z ichiga oladi[3]. Har bir laboratoriya ishidan so'ng ushbu mavzu bo'yicha bilimlaringizni tekshirish imkonini beruvchi nazorat testi o'tkaziladi. Molekulalarning modellarini qurish bo'limi qiziqarli bo'lib, uni ma'lum nazariy bilimlarsiz o'zlashtirib bo'lmaydi.



Multimedia vositalari bilan ta'minlangan auditoriyalarda nazariy mashg'ulot olib borilayotganda raqamlashtiruvchi(planshet)dan vositalardan foydalanish eng muhim

ma'lumotlarni vizuallashtirish va urg'u berishning qo'shimcha vositalarini ta'minlaydi. Bundan tashqari, planshet taqdimotni tayyorlash vaqtini sezilarli darajada qisqartiradi, chunki u maxsus dasturlar (ChemOffice va boshqalar) yordamida formulalar va kimyoviy tenglamalarni terish zaruratini yo'q qiladi. Planshet o'qituvchiga bevosita mashg'ulotda mazmunga tezkor o'zgartirishlar kiritish imkoniyatini beradi, bu esa o'quv jarayonini ancha moslashuvchan qiladi. Nazariy mashg'ulot taqdimotni tayyorlashda barcha fikrlarni oldindan hisobga olish mumkin emas va planshetdan foydalanib, siz slaydni ko'rish rejimidan chiqmasdan ekranga ma'lumot qo'shishingiz mumkin. Planshet shuningdek, ko'plab jarayonlarni vizual ravishda namoyish qilish imkonini beradi, masalan, organik molekulaning kengaytirilgan formulasini yaratish, parchalardan molekula hosil qilish va hokazo. Tablet kimyoviy reaksiyalar mexanizmlarini ko'rib chiqishda ayniqsa qulaydir. Nihoyat, planshet sizga slayd-shou paytida "sichqoncha" vazifasini bajaradigan simsiz qalam yordamida slayd-shouni boshqarish imkoniyatini beradi.

Foydalanilgan adabiyotlar

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THERMOGENIN AND UNCOUPLING PROTEINS: MEMBRANE CONDUCTIVITY, LOCALIZATION IN MITOCHONDRIA AND INVOLVEMENT IN THERMOGENESIS

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The study of the mechanism of brown fat thermogenesis began with understanding the low coupling of respiration with the phosphorylation process in the isolated brown fat mitochondria as a thermogenic process [1]. For that time, this was a bold idea, since leading scientists [2] were inclined to believe that mitochondria, when isolated from the tissue, could be damaged and cause uncoupling respiration. The system of mitochondria coupled with phosphorylation is not very durable and is easily damaged under the influence of chemical, mechanical and temperature factors. Moreover, brown fat contains a lot of fat and fatty acids that were aggressive to mitochondria and cause a violation of their membrane permeability. This circumstance could lead to uncertainty or criticism of the obtained results. Considering these difficulties, research was continued in this direction. These efforts were not fruitless, and they led to the receiving of a specific protein from the inner membrane of brown fat mitochondria that was called thermogenin [3]. New research began around thermogenin protein, and a number of researchers suggested that thermogenin increases the conductivity of the inner mitochondrial membrane through the formation of conduction channels or increasing proton conductivity. An increase in the mitochondrial membrane conductivity would lead to activation of proton leakage and thermogenesis. To solve this problem, various artificial membranes were used, on which it was tested the membrane-modifying activity of thermogenin [4].

We tested this assumption by comparing the mitochondria of different tissues of warm and cold-blooded organisms [5, 6]. In these studies, we obtained evidence that in mitochondria of warm-blooded animals, uncoupled respiration can be up to 10 times higher than in cold-blooded organisms that may be created due to the uncoupling proteins UCP1, UCP2, UCP3 and others [2]. These proteins, localized in the inner mitochondrial membrane, significantly change their permeability. It is of great interest to bioenergetics to understand how their permeability will

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