

THE DEVELOPMENT OF THE COMPETITION FOR APPLIED ELECTRONICS, ORGANIZED BY THE "VASIL LEVSKI" NATIONAL MILITARY UNIVERSITY IN THE LAST 3 YEARS AND PROSPECTS FOR THE FUTURE

РАЗВИТИЕТО НА СЪСТЕЗАНИЕТО ПО ПРИЛОЖНА ЕЛЕКТРОНИКА, ОРГАНИЗИРАНО ОТ НВУ "ВАСИЛ ЛЕВСКИ", ПРЕЗ ПОСЛЕДНИТЕ 3 ГОДИНИ И ПЕРСПЕКТИВИ В БЪДЕЩЕ

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Abstract: *The competition for applied electronics has been organized for 3 years by the National Academy of Music "Vasil Levski" with the cooperation of the trading company "Elimex". In the first year it took place only in Veliko Tarnovo, in the second was held except in Veliko Tarnovo and in our faculties in Shumen and Dolna Mitropoliya. This year we have 6 races, including representatives from the BBU, Gabrovo and Varna. Each year the quality of the participants is also improved.*

Keywords: *control monitoring, radiation control, radiological risk, radionuclides, radiometric measurements, gamma background*

1. Introduction

Physics as a fundamental science studies the law of nature and is at the core of the technical sciences. Over the past 100 years, the role of engineering science has become indisputable. Ever since Aristotle's time, physicists have discovered laws, explained facts, created patterns to describe patterns of processes running around us and the universe. Fruit of physical thought is the international projects Dubna and Cern and the discoveries that are taking place in them. A striking example of the continued development of physics is the gravitational waves reported in February this year. They are space-time waves that occur when massive bodies accelerate in space, for example a pair of neutron stars, white dwarfs or black holes circling one another. Albert Einstein first predicted the existence of these waves in 1916 on the basis of his General Relativity Theory. But a century has not yet been directly observed. In order to respond to the stormy development of science, modern engineers must have in-depth knowledge not only in physics but also in other technical sciences such as Mechanics, Compromit, Fluid Mechanics, Thermodynamics, Electrical Engineering "," Nuclear Physics "and others.

In the last decades, the education system is experiencing a serious crisis and is in constant reform. Curriculum programs and educational standards are constantly changing, and this is accompanied by a reduction in the quality of education. Currently, the majority of university graduates do not continue to develop in the specialty studied - they either work in another field or work in positions that do not require higher education. At present, higher education institutions are hostages of their students because money comes with the student and he knows that. This has a negative impact on the level of education and the quality of the trained specialists, which inevitably affects their future realization. In order to overcome these negatives, it is necessary to find non-traditional ways of transmitting the information in order to reach the students as fully as possible.

Another problem is the abdication of the state from higher education. There are no uniform educational requirements. Even less than the sanitary minimum is the lesson in the natural sciences and science, which also includes physics. The link between secondary and tertiary education is broken and in some areas higher education has become a hostage to poorly planned and completed work in the middle stage of education. In many cases, basic habits, skills and knowledge are lacking in the Bachelor's degree.

Under the conditions mentioned above, the students and students who have been trained in technical specialties at the "Vasil Levski" National Technical University have to work. They experience a transition period, switching from one type of training that is typical of the middle class to another learning mode that

implies greater autonomy, responsibility and self-discipline. At the age of exit from puberty, maturation and self-decision, they are entering a new stage in their development as a person, person, and professional. This is most difficult for students in the first course, which is a course of adaptation to a new world and way of life.

2. History of the race

2.1. 2015/2016



In the middle of April 2016, I held an Indoor University competition "Best physicist - practitioner" in two rounds on 12 and 14.04.2016 together with the Elimex chain. In the first round of 56 participants, they decided to use a practical test with 30 questions from the practical application of knowledge in physics and gravitational disciplines. The top 12 players who scored the highest score qualified for the second round. There, classed cadets produced an electronic circuit pattern "American Police Chees" for 1 astronomical hour. Here, besides the fact that the model has to work for the set time, the correct handling of the various instruments and instruments and the observance of the safety measures was also assessed. Through this competition we strive to learn the interesting and practical aspects of physics. A significant proportion of university students and students have not graduated from vocational high schools, lacking the necessary technical knowledge and skills, and this was perhaps one of the first encounters for working with real tools and tools. Some of them will be future engineers, and this will be one of the first steps in building them as specialists, even though they are outside the curricula they are training for. The competition has caused many tremors and excitement in the participants, as well as topics for conversations and noble disputes between them. There were also those who regretted their refusal to take part in the final round because they had not taken a soldering iron before.

2.2. 2016/2017

In the last school year I changed the form of the competition in Applied Electronics. Unlike the last school year, it is held in 2 rounds - a faculty round and a general university circle. In the first round, held on 04.04. in Veliko Tarnovo, 06.04. in Shumen and on 12.04. there were 12 students from each faculty in Dolna Mitropoliya. To allow for this round, select among those willing to participate by solving a theoretical test. The first 3 of each faculty qualified for the final stage, which took place on 10.05.2017 in Veliko Tarnovo.



In this way, I extended the circle of participants by giving more students and students the opportunity to express themselves and to show and perfect their abilities. This is the first race of this format, which is organized at our university. After the fictitious circles, he expressed his satisfaction with the organization and the opportunity for expression of the talented youngsters.

2.3. 2017/2018

The national interuniversity competition between the students and the students of applied physics in 2017/2018 was held in two rounds in April with the sponsorship of the trading company "Elimex". It was held in each of our faculties, the Higher Technical University of Veliko Tarnovo, TU-Gabrovo and TU-Varna. In the first round there were 12 contestants who worked out a practical model. The first two of each of our faculties together with the first two of the NAVY Vaptsarov, TU-Gabrovo and TU-Varna ranked for the final national competition, which we will host on 10 May 2018

3. Conclusions:

1. There is ^{137}Cs in the nettle sample taken after the Chernobyl NPP accident. This conclusion is experimental proof that the apparatus used is working normally and can determine qualitatively ^{137}Cs .
2. No samples of radioactive isotopes were found in the measurements carried out on samples taken from the area of Yovkovtsi dam.
3. The deviations observed in some graphs are within the permissible error of the SCC-256/91 spectrometer.
4. Qualitative environmental monitoring of the environment in the area of "Yovkovtsi" dam is carried out by the Regional Inspectorate of Environment and Waters - Veliko Tarnovo.

4. Literature:

1. Долчинков Н. Т. Организиране на мероприятия в НВУ „Васил Левски“, целящи популяризирането на физиката, Сборник доклади на СУБ, клон Велико Търново, 2016;
2. Долчинков Н. Т. Популяризиране на физиката в НВУ „Васил Левски“ през 2016 година чрез организиране на представителни неформални мероприятия, XLIV конференция на СФБ, Ямбол, 2016;
3. Долчинков Н. Т. Извънаудиторната работа с обучаемите като място за изява на възможностите им, НВУ „Васил Левски“ Велико Търново, 2017