

**UNION OF PHYSICISTS IN BULGARIA**  
**Ministry of Education and Science**  
**Eureka Foundation**  
**52nd NATIONAL CONFERENCE ON EDUCATION IN PHYSICS**  
**“Physics Education and Digital Technologies”**  
**13 - 16 June 2024, Sliven**

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The teaching of physics in an electronic environment took place entirely during the Covid-19 pandemic. It was a challenge to teachers to use appropriate strategies and approaches in the new educational environment to achieve educational goals. As a result, physics teachers developed their digital competencies and gained experience in organizing the teaching process in a digital environment, in using electronic resources, in promoting independent learning, and in providing feedback through electronic tests to monitor and assess knowledge. According to surveys, physics teachers have been among the most successful in adapting to the new conditions and, after the pandemic, have confidently continued to use digital technologies to expand opportunities for better interaction with students. The use of new interactive visualization methods and tools, virtual learning experiments, video demonstrations, electronic learning management, signage and graphical representations enhance students' understanding of learning material and motivation for learning activities.

In the Proceedings of the National Conferences on Education in Physics, even before the pandemic, there has been a steady increase in the number of papers related to the use of digital technologies, regardless of the conference theme, indicating an interest in supporting learning through digital resources and developing the digital skills of physics teachers.

The theme of the 52nd National Conference on Physics is relevant due to policies to promote the use of digital technologies in teaching, activities to improve teachers' qualifications in this area, and the provision of a greater choice of resources - virtual learning environments in different platforms and digital spaces, appropriate equipment and the Internet. Teachers are learning to select and use resources, but an increasing number are creating them themselves.

Undoubtedly, the use of digital technologies in physics education has advantages related to the possibilities of implementing interactive methods, new approaches such as integral approach, learning by discovering, problem-based teaching and learning, model-based approach, etc. But in practice, there are also cases where teacher explanations are replaced by reading presentations, replacing the real experiment with video demonstrations only, even when there is a possibility of a real experiment or work with electronic textbooks.

Let us show how digital technologies support physics education, distinguishing their formal use from their great potential for effective learning activities in which students more easily grasp complex physical ideas and apply what they have learned to new situations.

#### **Thematic areas for participation in the conference:**

##### **SECONDARY SCHOOL EDUCATION**

1. Approaches to teaching and learning in a digital environment. Introducing new practices in teaching. Changes in the organization of the learning process.
2. Selecting resources and creating resources to support the learning process.
3. The content of physics education and digital technologies for conducting physics learning experiments, solving physics problems, and in conducting different types of lessons - subject and integrated.
4. Competences for working in digital environment and professional development of teachers. DigCompEdu framework for teachers' digital competences.
5. Forms of collaboration in digital environments - school, institutions, international cooperation.
6. Digital technologies and student assessment through digital resources. Promoting self-evaluation and reflection.
7. Using digital technologies in non-formal physics education.
8. Does artificial intelligence have a place in schools.

##### **HIGHER EDUCATION AND SCIENTIFIC RESEARCH**

1. Digital technologies in different types of educational activities - lectures, workshops, seminars. Digital resources for knowledge assessment.
2. Organization of independent learning for undergraduate and postgraduate students supported by libraries with digital resources.

3. Digital technologies in higher education research.

***Approved papers presented at the conference will be printed in full text in Proceedings with ISBN code.*** Only papers for which the participation fee has been paid will be published. Participation in the conference by at least one author of a paper is mandatory. Papers can be presented orally or as a poster (with an approximate size of 70x90 cm or A1 format). The latter option requires the presence of the presenting author throughout the poster session.

The pedagogical specialists who participated in the conference, if they wish, will receive a Certificate according to the Regulation No. 15 of the Ministry of Education and Science, Bulgaria (Article 49), dated 22.07.2019, which regulates the organizational forms and the way of awarding qualification credits. The certificate may be recognized by the relevant authorities for one qualification credit. Participation in the conference is expressed in attendance and presentation of results of professional activity - a delivered paper, participation in a poster session or as a scientific supervisor in the Youth Minds Session. For this purpose, when registering to participate, it must be explicitly stated whether credit is being applied as a Supervisor of participants in the Youth Minds Session. The participant requesting qualifying credit must submit an abstract according to the requirements below. Abstracts will be included in the conference materials.

Within the 52nd National Conference on Education in Physics, with the kind support of the Eureka Foundation, the traditional Youth Scientific Session for high school and university students on **"Physics and the World of Technology"** will be held, which includes the following components:

- Computer presentations, websites, computer animation ideas, development of demonstrations on the topic showing the relationship of physics with technology and innovation (to be presented during the conference).

- **National essay competition** (online, for students) on "Physics in my future "\*\*.

- **National photo competition** (online, for high school and university students) on "Physics, harmony and phenomena in nature".

*\*\* Guidelines for participation and the conduct of the competitions will be published on the conference website: <http://upb.phys.uni-sofia.bg/conference/NK/52NK.html>*

**FEES Until 30.04.2024 (reduced fee)**

For participation with a report:

For UPB members - BGN 50.

For non-UPB members - BGN 60.

For each subsequent report - BGN

25.

For students - BGN 20.

For teachers - participants in the Youth Session as supervisors, requesting a certificate of credit - BGN 30.

For participation without a report:

For UPB members: 25 BGN.

For non-UPB members BGN 35.

**30.04.2024 - 05.06.2024 (standard fee)**

For participation with a report:

For UPB members - 60 BGN.

For non-UPB members - BGN 70.

For each subsequent report - BGN

30.

For students - BGN 20.

For teachers - participants in the Youth Session as supervisors, requesting a certificate of credit - 40 BGN.

For participation without a report:

For UPB members: 30 BGN.

For non-UPB members - BGN 40.

## IMPORTANT DATES

**08.04.2024**

Send essays to: physconfedu@phys.uni-sofia.bg with Subject/reference: 'essay competition'.

**01.05.2024**

Submission of an application\* for participation in the conference and in case of participation with a paper sending an abstract (up to 300 words) to e-mail: physconfedu@phys.uni-sofia.bg

**10.05.2024**

Submit an application for participation in the photo contest and send photographs and a description to e-mail: physconfedu@phys.uni-sofia.bg with the subject/reference: 'photo contest'.

**15.05.2024**

Publication of a second announcement

**03.06.2024**

Application for participation in the **Youth Minds Scientific Session** with presentation during the Conference

**05.06.2024**

Deadline for payment of participation fee.

**13.06.2024**

Registration and opening of the Conference

**20.07.2024**

Send the full text of the reports ("camera ready") to e-mail: physconfedu@phys.uni-sofia.bg