THE VIRTUAL LAB WORK ON PHYSICS "IDENTIFICATION OF NATURE AND CHARACTERISTICS OF GASES USING METHOD OF STANDING WAVES"

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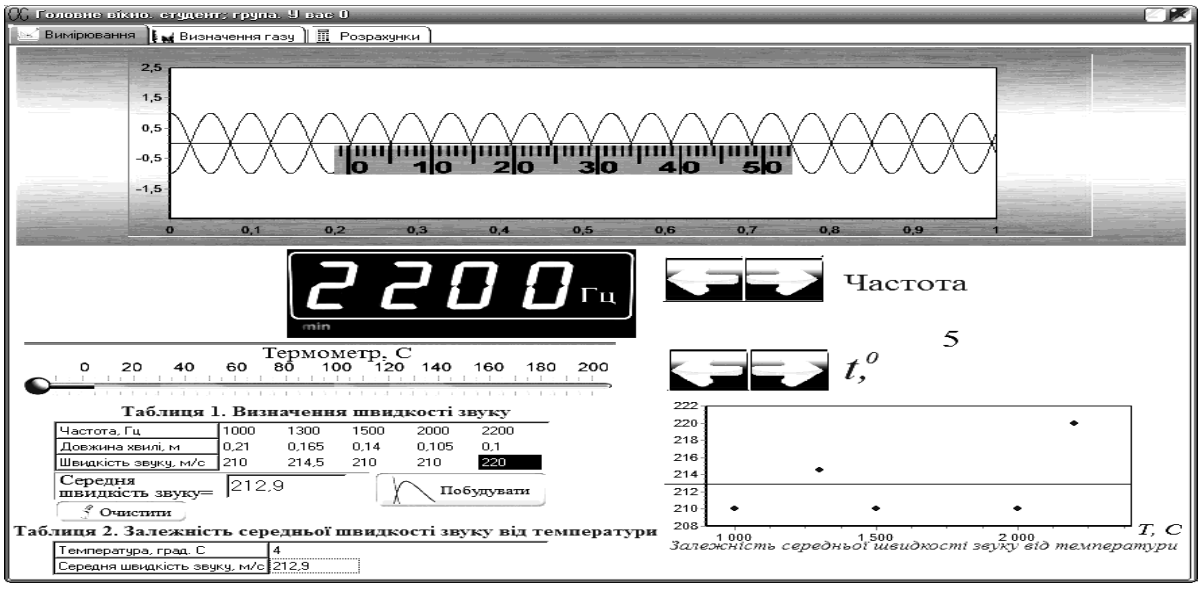
In fast developing world we can't imagine studying without using of information technologies. Lab work is a way to obtain practical knowledge. Extramural students are not able to carry out practical lab works. Therefore creating of virtual lab works would be a very effective innovation.

The aim of this work is to describe virtual lab works on physics "Identifacation of nature and characteristics of gases using method of standing waves" in units "Mechanical waves" and "Molecular physics".

This lab work were created in C++Builder. It consists of 3 windows. In the first one you should enter student's name and group. In the second one we can see graphics of incident, reflected, and standing waves. The third window has 3 pages. On the page "Measurement" we can see an image of the wave, scale, dial with wave frequency, and thermometer. We can change temperature and wave frequency. Lower there is a table where we should enter value of physical quantities. While pressing button "Build" the program will build relevant graphics.

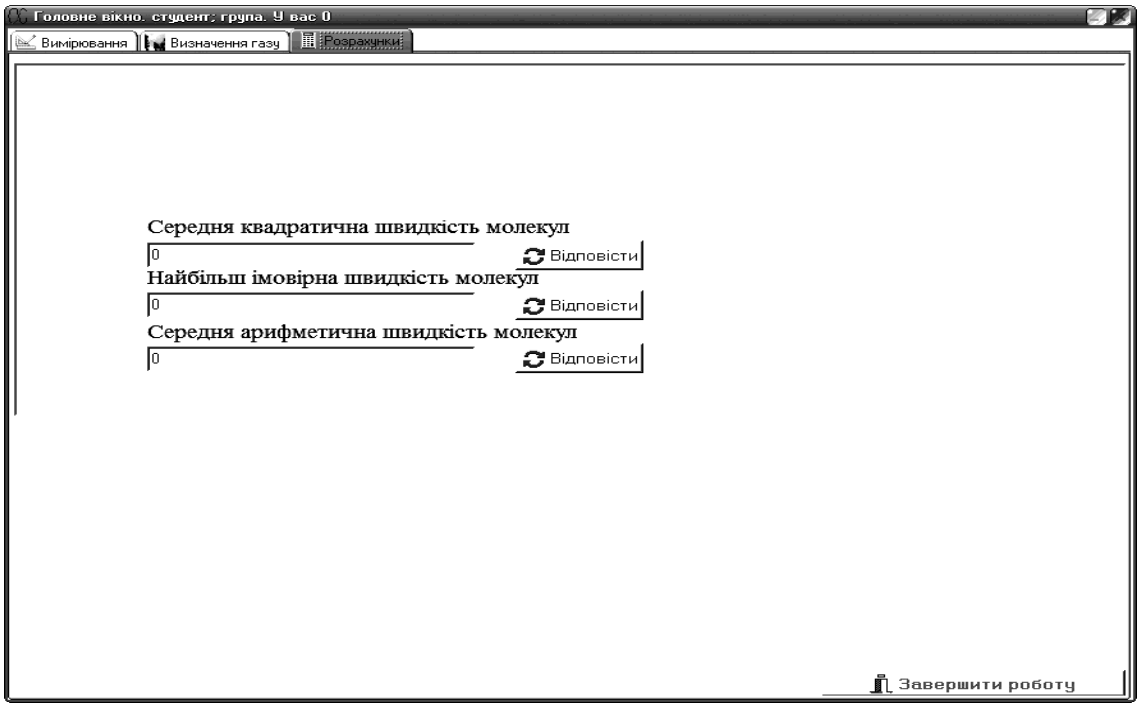


There is a table of dependence of speed on temperature on the page

“Identification of gas”. After filling this table the program will build relevant graphic. In the same time it builds graphics for different real gases. The program will automatically determine if the answer is correct or not.

On the third page we need to calculate such gas characteristics as root mean square speed, the most probable speed, and mean speed of molecules at a temperature 0˚C using the proposed formulas.

After filling blank of answers the program will determine the correctness of inputted data.



As a conclusion I can say that in conditiones of rapid development of conception of distance studying, such type of lab works becomes very actual. This allows us to learn disciplines without necessary equipment for real experiment. This can help studying to come to a new level.