**Sergey Poletylo. Using the experiment for the study of the physical facts in terms of the lesson.**

The series of experiments which allows deeply penetrating you into the nature of any physical phenomena through both the teachers ‘and students’ research activities are characterized herein.

The indicated below experiments are some of others:

1.The Electrostatic Field Study

 To study the electric field at different distances, two electrometers showing a electric potential decrease (or intensity) of the distance from the charge were located on different distances from the Franklin’s wheel. Here is an opportunity to show that the potential does not change at points being equidistant from the charge; and points with same capacity are on the line belonging to a certain equipotential surface.

2.The Universal Gas Constant Determination

An alternative method of the universal gas constant determination with a consumer device measuring the blood pressure (a mechanical blood pressure meter of the aneroid type) is proposed to the existing one as it is available both in the science classroom and at home. If the air tank of the blood pressure meter is used, there is no need to weigh the expense of the air mass as it is established through the volume of water displaced. The feature of the implementation of the method is based on some existing knowledge of students. The examples of the experimental tasks grounding on the method used are given.

3. Boyle Law Check

This experiment is also performed by means of the mechanical blood pressure meter. The method is very simple and accessible. The volume of air in the cuff is installed through the volume of water displaced, and shows of the blood pressure meter guarantee the pressure being accurately measured. Some family of isotherms (heating the vessel with a cuff) can be got thanks to this method, which confirms the correctness of the Boyle law.

The proposed experiments can be used by any teacher of Physics while teaching the new material, as well as at the time of gaining the experimental skills in laboratory and physical practicum works.

The common to all of these three proposed experiments is that they assist the students to understand the physical nature of the phenomena under the consideration of the availability of each of them. Each experiment contains a research component, through which students firmly learn the physical material. Classes, where the elements of any study are used, are very interesting for students as they feel themselves as researchers there. Some knowledge gained in these classes is effective and durable.

**Key words:** physics experiment, investigation of physical evidence, physics lesson.