

# Abstract

Information and communication technologies (further referred to as „ICT“) are increasingly influencing whole structure of the society. The integration of ICT into education together with the transition of the traditional teaching into a modern learning environment is therefore understood as one of the key factors of further development.

This work examines some of the possibilities of applying electronical support for teaching chemistry at high schools. It focuses mainly on the visualisation of the subject matter, suitable positive motivation and incitement of the students. This paper describes in detail the presentation of subjects in chemistry using software applets of Wolfram Mathematica.

One of the goals of this paper is to introduce the software and to present its potential application in teaching chemistry. Furthermore it shall encourage the use of particular demonstrations applets of the software Wolfram Mathematica.

To achieve this goals, the author of this paper describes in detail the source codes of seven demonstrations applets called “Formulas and Structures for Some Simple Molecules“, „Build Your Own Atoms“, „Visualizing Atomic Orbitals“, „Alkanes“, „Oxidation States of Carbon“, „Valence Shell Electron Pair Repulsion (VSEPR) Theory“ and „Ideal Gas Law“, which are available for free on the official website of Wolfram company. The most important functions contained in the source codes of these applets are described in detail. Using those functions the author of this paper creates her own applet called “pH”.

The final part of this paper presents a research conducted in the form of interview with students of high schools. The aim of the empirical part of this paper is to investigate and describe the extent in which educational software can be used. The survey focused mainly on students' opinion about the software Wolfram Mathematica and its application in the classes.