This diploma thesis is focused on development and production of functional parts and new materials for the purpose of supporting educational website www.studiumchemie.cz on evaluation of its operation. The changes were made in graphical, structural and functional parts of website, which were designed based on the analysis of behavior of visitors to the website and by direct reaction of visitors. Changes were related to structure of database of chemical experiments or creating new features for registered users, such as evaluation of materials or personification of user profile. In cooperation with specialists have been incorporated several new materials, focusing on the issues of nuclear magnetic resonance (NMR). In addition to that, two new games have been prepared - Chemical pentathlon and Identify molecules. New materials should be used to expand the portfolio of educational materials on the website. Furthermore, the administration interface has been created and designed to meet the needs of editorial contributors site without prior programming experience.

Evaluation of the statistics associated with the operation of the site showed that web traffic continues to grow. The most visited parts of the site are database of educational materials and videos of chemical experiments. The current site traffic is around 2500-3000 unique visitors per month.