

This work is about to design and implement the specific-heat analysis application. The application consists of two parts: the first one provides for data manipulation, the second one plots a graph. The data manipulation part resembles a spreadsheet program - each column in a dataset stands for one measurement. Columns containing a temperature data could be used for a specific-heat calculation. This calculation is based on this model functions: conduction electrons consideration, phonon contribution and Schottky contribution. It is also possible to arrange your own formulas by using basic mathematical operations (namely summation, subtraction, multiplication and division). Fitting data to the selected model is also possible. Levenberg-Marquardt and simplex method are being used for it. Hamiltonian matrix used for energy levels calculations of magnetic ions in crystalline electric fields could also be calculated. The application is written in C# programming language.