
The following research was dedicated to the investigation of emission spectra of different elements and their use in the analysis of clues. The used equipment was a spectrometer, the “Red Tide Usb-650”, and an application called “Overture”. The spectrometer has a spectral range from 350 nm to 1000 nm. It’s a very lightweight and portable device, not taking up much space and weighting only 190 g. The sensitivity of the device is 75 photons at a wavelength of 400 nm. The optical resolution of the spectrometer is 2 nm, while the program can display accurate graphs with a resolution of up to 0.1 nm. The spectrometer’s integration time ranges from 3 ms to up to 65 seconds, but typically it doesn’t exceed 15 seconds. For very precise data recording the spectrometer can also use the optic fibres. The used program has a library of emission spectra of different elements. The experiment is performed by making the substance to emit photons by exciting it. The light from this substance is received by the spectroscope and the data are transmitted to the computer. The program generates an “Intensity-Wavelength” graph right away. But to analyse and to detect elements in clues, a graph is not the only required thing. Luckily, we have access to the emission spectra library built into the program. Those can be enabled and disabled to detect if the given element is present in the earlier analysed substance. Such a method can be used to detect elements in clues using spectral analysis at remarkable speeds and accuracies.