

## **Diploma thesis abstract**

### **“Pulse Terahertz Spectroscopy of complex Molecules”**

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Some of the vibration frequencies of molecular crystals lie in terahertz range. These vibrations correspond to inter- and intra- molecular vibrations. In present work the technique of pulse terahertz spectroscopy is used, to obtain absorption spectra in far-infrared region  $10\text{-}110\text{ cm}^{-1}$ . The influence of molecular and crystal structure on absorption spectra of molecular crystals is investigated by the example of some amino acids and polypeptides. The absorption spectra of the same substance in two phases, liquid and solid, are compared by the example of tetrabromoethane. The influence of temperature in the range  $23\text{-}230\text{ }^{\circ}\text{C}$  on absorption spectra of crystal solid is analyzed. Based on experimental data obtained in our laboratory and data of computer simulations, obtained from the literature, the correspondence between absorption lines and molecular vibration of the sample is established.

Scientific advisor

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