Annotation for bachelor's work

"Phototemporal spectroscopy for the measurement of absorption in organic semiconductors"

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An experimental technique for detecting and measuring dopant concentration in organic semiconductor single crystals based on the deflection photothermal "mirage-effect" method has been developed. An experimental setup was created and calibrated. Calibration was performed using crystalline silicon and graphene on a quartz substrate. To increase the sensitivity of the installation, the optimum frequency of the mechanical interrupter is determined. The nature of the noise is determined and their spectral densities are estimated.

Using the experimental setup, the photothermal spectra of the samples under study were measured, on which the absorption band of the dopant was recorded. Using reference samples with a known concentration of dopant, the concentration in the other samples is calculated. The minimum concentration of dopant was determined, which it was possible to fix using experimental technique.