Abstract: In these bachelor thesis optical properties of materials are studied. This materials are purposefully prepared for effective second harmonic generation (SHG) and for its usage in optoelectronics. Specificely we will measure the first hyperpolarizibility. Non-coherent phenomenon of hyper-Rayleigh scattering will be used. Considering its incoherence, the effect is very weak. It's necessary to use a strong source of light, pulse laser and a sensitive detection device, photomultiplier. Samples are prepared in cooperating chemical laboratories of Faculty of Science of Charles University in Prague. Additionally, we will discuss participation of two-photon fluorescence in output intensity because of its interchangeability with SHG.