

THz pulses generation in gases under optical breakdown condition.

Diploma thesis abstract

During the last years, the laser breakdown plasma is shown as a new good practical media for generation of THz pulses and their further conversion into the other spectral regions. The values of the achieving in the plasma experiments THz field is comparable then with the use of the other sources and medium such as photoconductive antenna, nonlinear crystals etc. The plasma source has also wider spectral band comparing with the other indicated above. This property is important enough for the spectroscopic applications.

In the present work we studied the properties of the low-frequency field emitting from the laser breakdown in various inert-gases, such as Ar, Xe, Kr, Ne. We discuss temporal properties of the emitting field under different gas pressures and laser field intensities.