

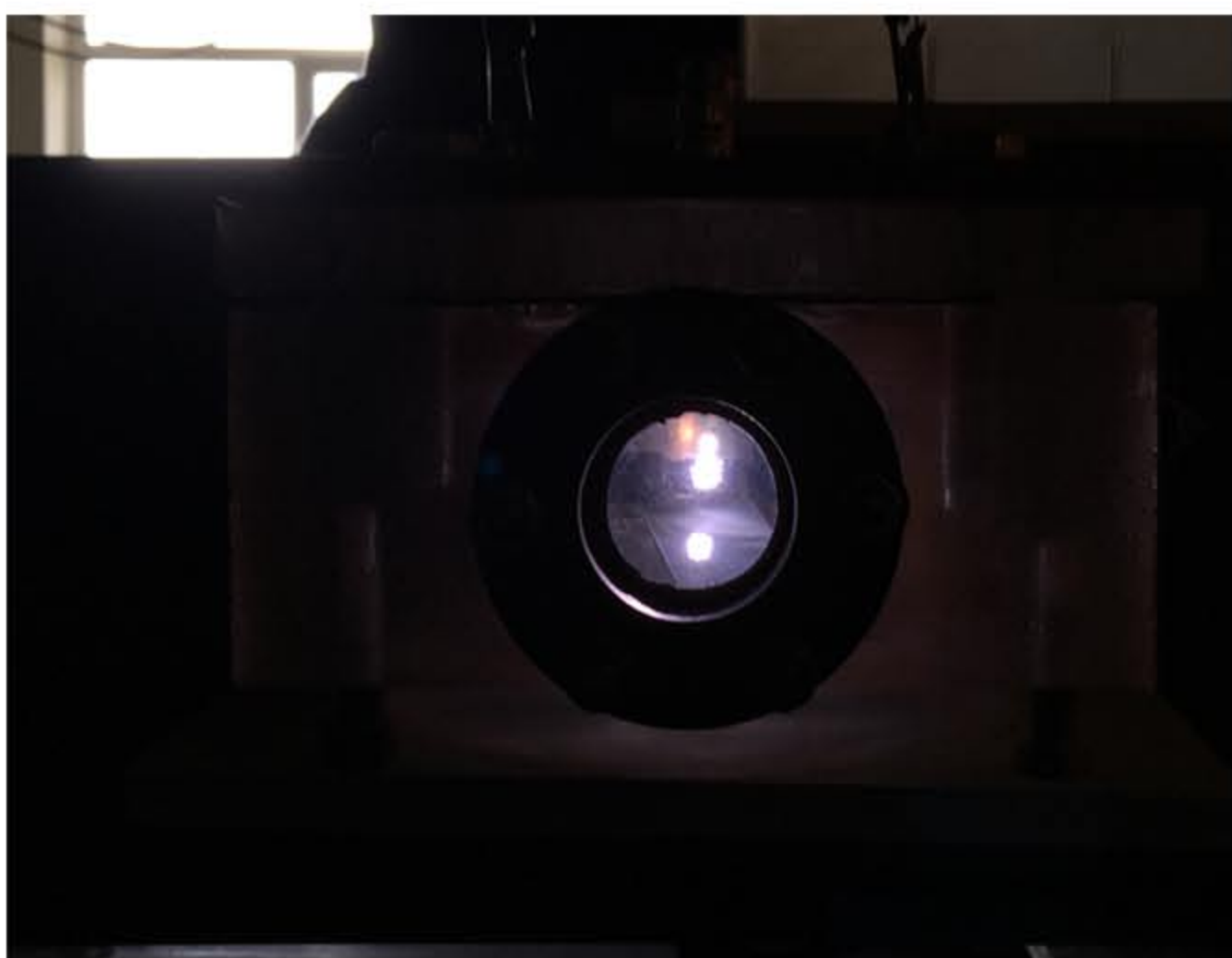
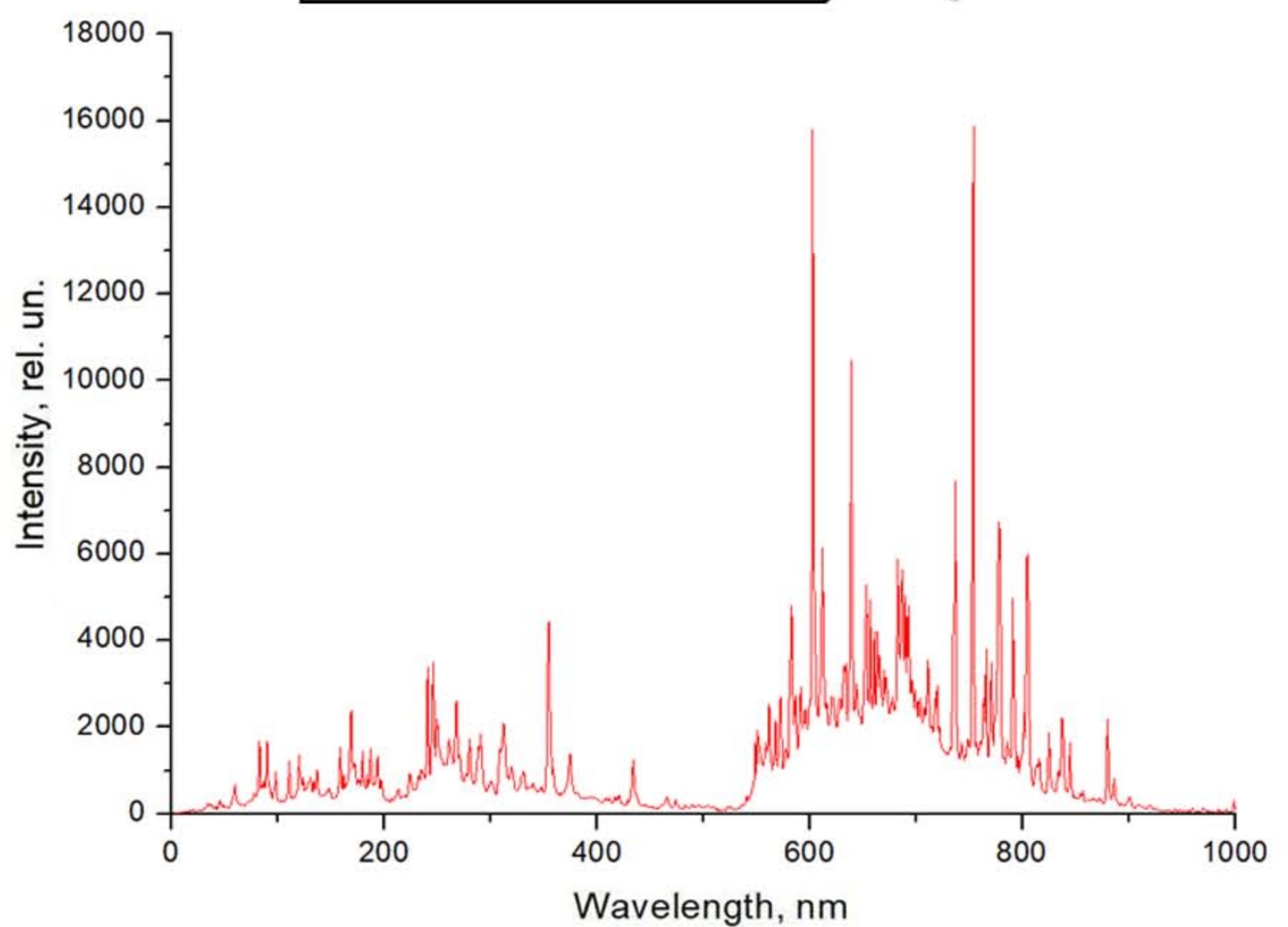
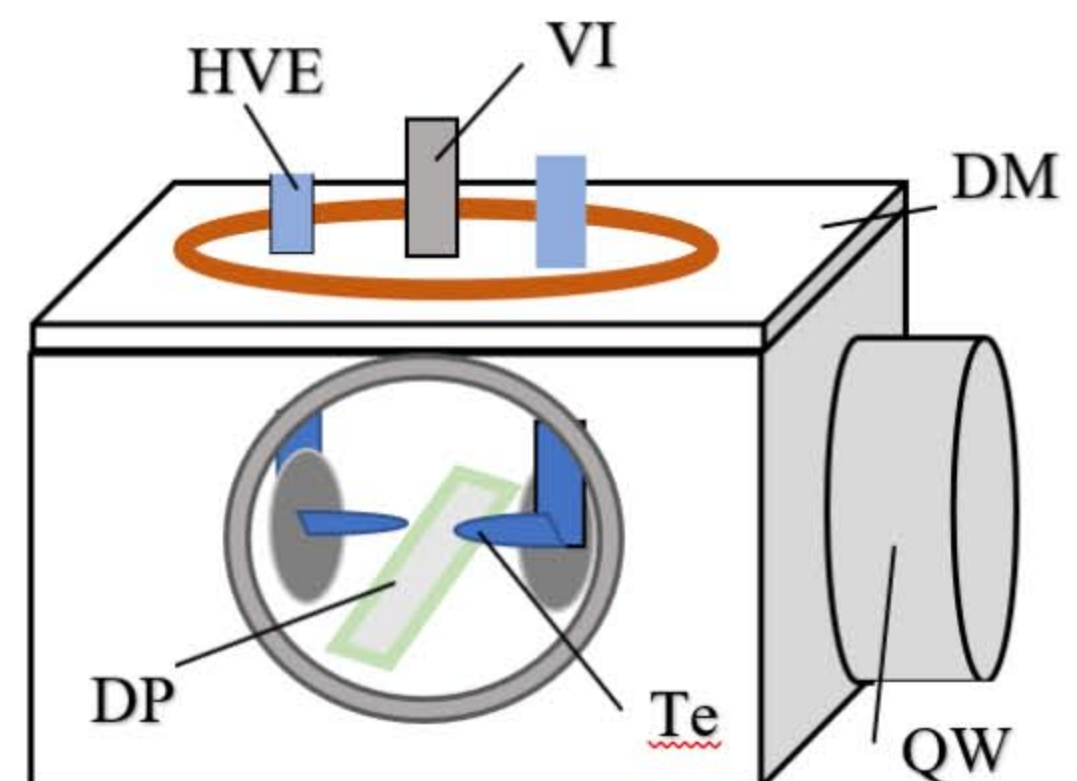
STUDY OF THE PROPERTIES OF GAS DISCHARGE PLASMA WITH TELLURUUM VAPOR

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The study of the properties of gas discharge plasma in mixtures of inert gases with tellurium vapor is of particular interest due to the combination of fundamental energy transfer processes and applied possibilities in nanotechnology. The study of the kinetics of the interaction of metastable inert gas atoms with tellurium atoms allows for a deeper understanding of the mechanisms of selective excitation and ionization, which is key to the development of highly efficient gas-discharge light sources. The relevance of this topic is reinforced by needing for modern microelectronics and photonics in new semiconductor materials with a direct band gap, the production of which requires a deep understanding of the physicochemical processes occurring in non-equilibrium plasma of chalcogen mixtures.



Time-integrated emission characteristics of the discharge were recorded using a MS 7504i spectral monochromator and an HS 101H CCD camera. The information was recorded and analyzed using a personal computer. The results of the first measurements of the spectral characteristics of the radiation of a mixture of tellurium vapor with an inert gas in a gaseous pulse-periodic discharge in the ultraviolet and visible spectrum were obtained.