

Abstract Submitted
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Electric-discharge source of spontaneous UV radiation based on xenon and cesium bromide gas-vapor mixture YURIY SHPENIK, MIRON KLENIVSKIY, VOLODYMYR KELMAN, YURIY ZHMENYAK, Institute of Electron Physics, NAS Ukraine — Paper presents experimental investigations on obtaining UV luminescence of XeBr* molecules (spectral maximum at 281 nm) at excitation of alternative nontoxic Xe – CsBr vapor mixture by a longitudinal pulsed-periodic discharge. Under optimal conditions the spectral composition of discharge radiation in the UV region hasn't considerable distinctions from the high-efficiency XeBr- excilamp which contains toxic bromine gas. The parameters and features of a new active medium as well as it's capability to serve as a new exciplex XeBr* source of UV radiation as alternative to ecologically unsafe and harmful sources containing mercury or toxic halogen-carrier are discussed in the paper too. Based on our successful previous investigations we proposed and tested a new mixture of xenon with cesium bromide vapor. At excitation by a longitudinal pulsed-periodic discharge of a two-component Xe-CsBr mixture, an intense UV radiation from the discharge tube was observed. The analyses of the discharge emission spectrum structure shows that this band is a result of electron transitions from excited *B* to ground *X* states of exciplex XeBr* molecules which forming in the discharge plasma.

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