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Vacuum ultraviolet emission characteristic of gas mixture ratio with various xenon mole fraction and filling gas pressure in AC-PDPs.

N. L. Yoo, K. B. Jung, J. H. Lee, P. Y. Oh, Y. G. Han, S. V. Lee, H. S. Uhm* and E. H. Choi

PDP Research Center, Department of Electrophysics, Kwangwoon University
447-1 Wolgye-Dong, Nowon-Gu, Seoul 139-701, Korea

*Department of Molecular Science and Technology, Ajou University
San 5 Wonchon-Dong, Youngtong-Gu, Suwon 443-749, Korea

The improvement of luminance and luminous efficiency is the one of the most important part in surface discharge alternating current plasma display panels(AC-PDPs). We measured the emission spectra of vacuum ultraviolet rays in AC-PDP with binary of Ne-Xe and ternary He-Ne-Xe gas mixtures ratio according to various xenon mole fraction(XMF) and filling gas pressure. The influence of binary and ternary gas-mixtures ratio on excited Xe* resonant atoms and Xe₂* dimers has been investigated. It is noted that the VUV intensity of 147 nm from resonant xenon is found to increase for XMF up to 10 %, and to be saturated at XMF beyond 10%, while the VUV 173 nm from the molecular dimer increases continuously according to increasing the XMF and the filling gas pressure. The VUV 147 nm and 173 nm emission intensity of the ternary He-Ne-Xe gas mixture is higher than that of the binary Ne-Xe gas mixture for XMF and filling gas pressure in this experiment.