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The Optimization of AC-PDP Cell by 2D Simulations

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Plasma display panel(PDP) is a leading technology for large-area flat panel displays. A current issue in operating the PDP cell is that the efficiency of the PDP cell is very low. To increase the efficiency of the PDP cell, the visible light needs to be maximized and the power consumption minimized. Since the excited xenons are related to the production of the visible light, it is important to optimize the cell geometry and the gas composition that produce the excited xenons more efficiently. A 2D-fluid code (FL2P⁽¹⁾) is developed and used to simulate the plasma dynamics and the radiation transport in the PDP cell. The cell is optimized with the code for various operating conditions and cell dimensions such as the voltage pulse, electrode length, electrode spacing, gap size, dielectric constant, gas mixture ratio, pressure, and pulse duration.

[참고문헌]

1. Y.K. Shin et al., IEEE Trans. Plasma Sci. (to appear in Feb/1999);
Y.K. Shin et al., Jpn. J. Appl. Phys. 38 (1999) pp. L174-177.