[Display Technology]

ELECTRICAL BREAKDOWN IN A MIXED GAS

Han S. Uhm
Department of Molecular Science and Technology, Ajou University, Suwon
442-749, Korea

Abstract

The properties of the breakdown voltage in a mixed gas are investigated based on Townsend criteria. The breakdown temperature and voltage are obtained in terms of the gas mixture ratio. As an example, we investigate electrical breakdown properties in neon gas mixed with xenon, as an application to the plasma display panel. It is shown that the breakdown voltage decreases, reaches its minimum value at the mixture ratio of 0.02 and then increases again, as the mixture ratio increases from zero to unity. Plasma density at breakdown in a mixed gas is described in terms of the gas mixture ratio. For the case of plasma generation in neon gas mixed with xenon, the optimum value of mixture ratio for the highest plasma density is found to be the mixture ratio of 0.03.

*Coworkers: Eun H. Choi, Guansup Cho and Ki W. Whang