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Aging Characteristics of MgO-SrO-CaO Films as a Protective layer for AC PDPs, JINHUI CHO, RAKHWAN KIM, KYOUNG-WOO LEE, CHOONGYONG SON AND JONG-WAN PARK (Dept. of Metallurgical Eng., Hanyang Univ., Seoul 133-791, Korea) Hee-Jae Kim (Dept. of Ordnance Eng., Korea Millitary Academy)

The present PDPs are subject to further improvement because of serious problems they have such as high firing voltages and short lifetime. One of the attempts can be to replace the conventional pure MgO with other protective layer materials to alleviate the problems. Panels with various protective layers of MgO-SrO-CaO systems were prepared by e-beam evaporation. The input E-gun power was fixed at 1.4kW, a high-voltage 180° bent-beam electron gun was used, and the accelerating high-voltage was set constant at 7.0kV. However, oxygen gas was not introduced in the evaporation chamber. The voltage performance of panels was examined in a specially designed system in this study. The panel with 0.6MgO-0.2SrO-0.2CaO exhibited lower firing and sustain voltages than those of pure MgO. In order to probe the stability of operating voltage with composition of MgO-SrO-CaO films, the voltage chacteristics of the films were analyzed in terms of time dependency.

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FORMATION TECHNOLOGY OF MgO PROTECTING LAYER DEPOSITED BY PE-MOCVD, M. S. KANG[1], K. M. LEE[2], J. C. BYUN[3], and C. K. Choi[1](Dept. of Physics[1], Dept. of Electronic Eng[2]., Dept. of Chemistry[3], Cheju National Univ., Cheju 690-756, Korea)

The MgO thin film as a protecting layer for an ac-type plasma display panel (PDP) was deposited on Si (100) substrate by plasma-enhanced metal-organic chemical vapor depostion (PE-MOCVD). The source material used in this study was magnesium acetylacetonate complex $Mg(C_5H_7O_2)_2$ heated in the vaporizer at 210℃. The phase, chemical composition, crystallization, surface morphology and the microstructure of the MgO films were investigated by XRD, XPS, SEM and AFM, respectively. Ellipsometry was used to measure the film thickness and deposition rate. MgO films with (200) orientation were formed at flow rate ratio of O_2/ Mg $(C_5H_7O_2)_2$ = 4 and at substrate temperature of 400℃. (220) plane peak was observed with increasing the flow rate ratio. The deposition rate was about 30nm/min which was not affected by the flow rate ratio.

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EFFECT OF THE VARIOUS CODOPANTS ON THE LUMINESCENT PROPERTIES OF Y_2O_3:Eu PHOSPHORS.

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It has been well-known that $Y_2O_3:Eu^{3+}$ phosphor shows relatively poor color purity in spite of its excellent brightness. In order to enhance its color purity and CL (Cathodoluminescence) brightness at the same time, the mechanism to improve the chromaticity and luminescent characteristics of $Y_2O_3:Eu^{3+}$ phosphor was studied varying dopant Eu^{3+} concentration, temperature, atmosphere and the addition of codopants such as Al^{3+}, Cu^{2+}, Ca^{2+}, In^{3+} and Cr through PL(Photoluminescence), PLE(Photoluminesc-ence excitation), CL, SEM, XRD and decay time measurement. When Al^{3+} was codoped, the brightness was improved about 30 % and the color coordinate was enhanced slightly. It could be considered as the density of the crystal defects in the host material was decreased. However, some codopants drastically deteriorated the brightness without the improvement of the color coordinate. Consequently, the luminescent properties of $Y_2O_3:Eu^{3+},Al^{3+}$ were better than those of $Y_2O_3:Eu^{3+}$ itself.

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HIGH TEMPERATURE MAGNETIZING ABILITY OF Nd-Fe-B SINTERED MAGNETS.

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The magnetizing ability of Nd-Fe-B sintered magnets prepared by a powder mixing method is investigated. The best magnetic properties achieved were a $(BH)_{max}$ of 42MGOe and a coercivity of 7kOe. The magnetizing ability of magnets is primarily affected by the alignment and shape of magnetic particles. This magnetizing ability is adversly affected by the local demagnetization field, the strength of which is inversly proportional to the temperature at which cooling begins. Cooling from near the Curie temperature in a magnetic field results in a good magnetizing ability. This study investigates magneto-static energy and magnetization energy in order to determine optimum applied fields and cooling temperatures for Nd-Fe-B sintered magnets.

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