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Anodic Bonding Technique for Field Emission Display Spacer Mounting

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Abstract

We studied the Anodic Bonding Technique in films which were made by different ways on glass substrate in this paper.. Then testing the strength degree of combining between Soda lime glass and Al/Cr/ITO films. We discussed the influences of different Al/Cr films to whole spacer strengths by changing thickness of film at interface , bonding temperature, bonding voltage in this paper. We measured the surface shape by AFM (atomic force microscope) . The bonding area were photo by optical microscopy, then analyzed by image software. The equipment EDS(Energy dispersive spectrometer) analyzed element in bonding interface. The strength of bonding were tested by stress and strain experiment. And SEM(scanning electron microscope) were used to observe the broken surface. The result from our experiment showed that the best bonding area, current, strength values were got in higher temperature, voltage, suitable thickness. That can be excellent spacers of Field emission display by collecting Wet Etching.The best parameters in our experiment were thickness 300nm, bonding temperature 300 ℃, bonding voltage 700V.

Key words: Anodic bonding;Sputtering;Field Emission Display;Spacer