

Effect of Environmental Stress Factors on the Degradation of Display Glass

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Abstract : The effects of environmental stress factors such as storage conditions on the deterioration phenomenon and the characteristic of the display glass were studied. In order to investigate the effect of chemical stress on the glass during the period of storage, the respective components of commercial glass were first identified by XRF (X-ray fluorescence). The glass was exposed in the acid, alkali, neutral environment for about one month. Thin film formed on the glass surface was analyzed by XRD (X-ray diffraction) and FT-IR (Fourier transform infrared). The degree of corrosion and the rate of deterioration of each sample were confirmed by measuring the concentrations of silicon, calcium and chromium with ICP-OES (Inductively coupled plasma-optical emission spectrometry). The optical properties of the glass surface were confirmed by SEM (Scanning electron microscope) before and after the treatment. Acknowledgement—The authors gratefully acknowledge the financial support from the Ministry of Trade, Industry and Energy (Grant Number: 10076817)

Keywords : corrosion, degradation test, display glass, environmental stress factor

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