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Quantitative analysis of interfacial reaction and interfacial thickness by FTIR and Ellipsometry. MANORANJAN PRUSTY, HAN GOOSSENS, GERT DE WIT, PIET LEMSTRA, Technical University Eindhoven, MATRIN VAN DUIN, DSM Research, Geleen — We have studied the development of interface and also interfacial reaction in Polyethylene-co-methacrylic-acid (PE-co-MA) and Styreneacrylonitrile-oxazoline (SAN-Oxaz) bilayer film. The interfacial reaction was studied in-line at different temperatures for the bilayer sample. A decrease in oxazoline and increase in amide and ester was observed. The intensity of amide I was found to have a plateau at higher time indicating that the reaction is diffusion limited. The growth of interface was also studied with the ellipsometer. The retardation, Δ and reflection ratio, $\tan\psi$ data were recorded for the bilayer sample at three angles of incidence (60°, 70° and 80°) and at different temperatures. These data were fitted according to a 4-layer model. The time variations of interfacial thickness in SAN-Oxaz/PE-co-MA bilayer was found to increase with time and finally go to a plateau at higher temperatures.

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