

Abstract Submitted
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Photoemission studies of the photo-degraded polyethylene and polystyrene ultrathin films ORHAN KIZILKAYA, CAMD-Louisiana State University, MASAKI ONO, Graduate School of Science and Technology, Chiba University, EIZI MORIKAWA, CAMD-Louisiana State University — The structural degradation induced by photon radiation in polyethylene and polystyrene ultrathin films has been investigated by ultraviolet photoemission spectroscopy (UPS) and molecular orbital (MO) calculations. The UPS results of pristine and degraded films show very good agreement with the calculated density of states by model MO calculations. The UPS and MO calculations reveal double bond conjugation and cross linking structure. Even though a considerable difference exists in the pristine chemical structure of both polymers, the photodegraded films exhibit very similar UPS spectrum, which indicates that the chemical structure of polyethylene and polystyrene films becomes indistinguishable after the prolong degradation.

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