Comparison of properties polyamide 6.6 surfaces treated by plasma and ionizing radiation

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The aim of this study was to compare the properties of polyamide 6.6 surfaces treated by plasma and ionizing radiation for adherence to polyacrylic rubber seals for automotive. Treatment of polyamide 6.6 by plasma was performed with nitrogen gas at a pressure of 20 psi. The irradiation of the samples was carried out by electron beam at different doses. After treatment the samples were incorporated into the polyacrylic rubber using a hydraulic press. The surface of polyamide 6.6 was characterized using different techniques. The untreated and irradiated samples did not join at polyacrilic rubber. The samples treated by plasma adhered at polyacrylic rubber efficiently and showed differences in roughness and an increase in contact angle when compared to untreated samples.