Abstract Submitted
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Tribology of polymer surfaces: Effects of plasma treatment[1]
RACHEL CHIU, WITOLD BROSTOW, HALEY E. HAGG LOBLAND, University of North Texas, ALEXANDER BISMARCK, KINGSLEY K.C. HO, Imperial College London, LAPOM-IMPERIAL TEAM — We have subjected several polymers with a large variety of chemical structures to plasma treatment for varying amounts of time. The effects of the treatment have been followed in terms of the water wetting angle (hydrophilicity), static and dynamic friction, scratch resistance and sliding wear. Some polymers do not undergo significant changes as a result of the interaction with plasma. However, other polymers show more pronounced and useful effects, such as a lowering of dynamic friction as in polycarbonate and polypropylene or a higher scratch resistance, mainly in low density polyethylene. These results can be explained in terms of the chemical structures and resulting degree of hydrophilicity.

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