The strong oxidation of the polymeric material has some unwanted effects:

» It decreases the average molecular weight of the polymeric chain leading to ageing of the treatment over time.
» In extreme cases the oxidation can lead to the formation of a layer of low molecular weight oxidised fragments (LMWOF) on the surface or even destruction of the material.

The creation of LMWOF on the surface of the film will lead to a very unstable surface as those fragments can easily be removed/washed away from the surface and are certainly not a good base for any adhesion layer.

» Corona treatment depends on the external humidity conditions of the environment and therefore quality consistency is a challenge.
» Corona only activates the surface. There is no direct coating process.

On a specific system the only parameter to control during a corona treatment is called the dosage.

Increasing the dosage usually leads to an increase of the surface energy up to the point when the materials gets damaged by the treatment.

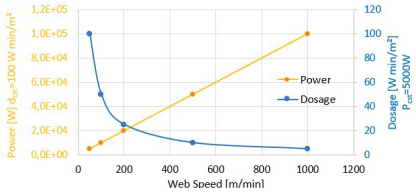

Fig. 1: Yellow: Increase of power to keep a constant dosage (100 W•min/m²) while increasing treatment speed. Blue: decrease of dosage when increasing the treatment speed while keeping the plasma power constant (5 kW).

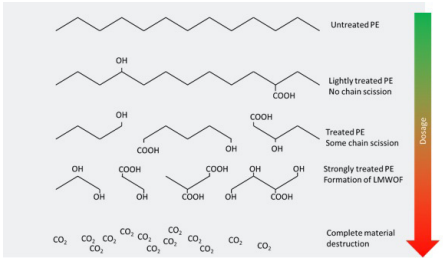

Fig. 2: Schematic description of corona (activation) treatment on Polyethylene (PE) with surface degradation by oxidation. The more functions you add, the more you damage the PE

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