

CHARACTERIZATION OF OZONE EFFECT ON HUMAN HAIR

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Ozone is a toxic, oxidizing agent formed in nature by lightning or UV radiation. In the modern world, exposure to ozone rises due to outdoor environmental pollution as well as various indoor appliances and consumer products, including those marketed for air “purifying” purposes.

The effect of ozone on human hair is not well studied consequently, we provide a brief study in this poster. Virgin, 6% and 9% bleached hair was exposed to ozone in a chamber for 1, 3 and 6 hours. Hair oxidation by the ozone revealed different behavior to oxidation as a result of liquid (bleach) or radiation (UV, IR). We observed changes of the hair both inside and outside the fiber.

We observed significant increase in hair roughness (dry combing force) as well as properties characterizing alpha-helix and matrix interaction (as observed by denaturation temperatures and post-yield tensile properties). The highest changes in properties were observed with virgin hair. The insult mechanisms of ozone action will be discussed.