Atmospheric pressure plasma jet treatment of textile for hydrophobic property

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Hydrophobicproperties are of interest in fabric and textile manufacture. Plasma processesbased on Sulfur hexafluoride (SF_6) are an effective source offluorine radicals and fluorination of materials surface can be successfullyrealized. Especially, atmosphericpressure plasma can produce water-repellent surfaces using a fluorinationprocess based on SF_6 containing gas mixtures. We have usedradio-frequency atmospheric pressure SF_6 containing plasma jet tomodify the surface of fabrics for the enhancement of the hydrophobic property. Inthis study, we investigated the effect of atmospheric pressure plasmatreatmenat under operational parameters: discharge power; flow rate of SF6; jettravelling speed; and jet-to-substrate distance on wettability (in terms ofwickability and wetting area) of textile. The increase of water contact angleof fabrics after SF_6 plasma treatment was observed.