

Application of plasma processes for functionalization of technical fibers and textiles

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The replacement of chemical fibers with fibers based on renewable natural materials is global task for sustainable development. The glass fibers as well as natural fibers of flax and hemp have vided technical applications and can be related to renewable resources against to chemical fibers. The functionalization of such technical fibers will be discussed. The plasma treatment and thin film coatings in combination with sonochemical processes are used for nanostructuring and functionalization of fibers and textiles. The properties of such fibers and textiles are characterized by SEM, EDAX, AFM, XRD, FTIR, Raman as well as by other mechanical, thermomechanical, optical and chemical methods.