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## Structure and physico-mechanical properties of low temperature plasma treated electrospun nanofibrous scaffolds examined with atomic force microscopy

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### Highlights:

- physico-mechanical evaluation of stiffness and adhesive properties of electrospun mats after their exposition to low temperature plasma is reported
- plasma treatment can be useful method for the modification of the surface of polymeric scaffolds in desirable manner
- the as-spun and plasma treated mats have similar morphological features in micro- and nanoscale
- plasma surface modification can change hydrophobic surface into hydrophilic

### Abstract

Electrospun nanofibrous scaffolds are willingly used in tissue engineering applications due to their tunable mechanical, chemical and physical properties. Additionally, their complex openworked architecture is similar to the native extracellular matrix of living tissue. After implantation such scaffolds should provide sufficient mechanical support for cells. Moreover, it is of crucial importance to ensure sterility and hydrophilicity of the scaffold. For this purpose, a low temperature surface plasma treatment can be applied.

In this paper, we report physico-mechanical evaluation of stiffness and adhesive properties of electrospun mats after their exposition to low temperature plasma. Complex morphological and mechanical studies performed with an atomic force microscope were followed by scanning

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