processed by the plasma self-sustained volume discharge to give the surface the hydrophilic properties of the membrane.

Contact angle of wettability the surface track membrane was measured just after the chemical treatment in NaOH, on the first, third, seventh, fourteenth, twenty-first days after plasma modification.

Contact angle of wettability results are shows in table 1.

Table 1. Contact angles of wettability samples values

Treatment time	Native samples	first day	third day	seventh day	fourteenth day	twenty-first days
30 seconds	76,9±0.5	33,0±1,25	37,2±3,74	36,8±0,21	37,8±3,41	39,0±2,69
60 seconds	76,9±0.5	31,2±2,25	36,3±3,56	36,9±0,85	39,5±5,24	35,0±0,78
90 seconds	76,9±0.5	26,6±6,07	35,1±3,71	34,3±2,92	37,3±5,2	37,3±3,64

Thus, the plasma treatment of the track membranes surface can change contact surface properties. Low-temperature atmospheric plasma-induced modifying increases hydrophilic surface properties. Hydrophilic properties of the polymer after modification retains over 21 days.

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STRUCTURE OF POLYMER NONWOVENS MATERIALS OBTAINED BY ELECTROSPINNING AND SOLUTION BLOW SPINNING

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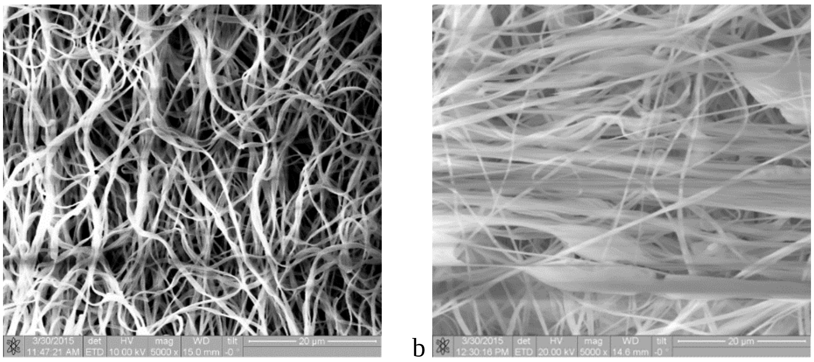
Nowadays the perspective polymer materials which can control the structural and functional state of the cells involved in regeneration process are widely researched. The special 3D nonwoven matrixes which can regulate the regeneration processes of living tissues are widely applied for these purposes. Now the method of electrospinning (ES) [1] and method of the solution blow spinning (SBS) [3] are the most effective and promising. The morphology of nonwovens materials is one of the most significant properties defining mechanical properties and further application. The objective of this work is to compare the structure of nonwoven materials obtained by electrospinning to SBS method.

Nonwoven polymer materials were produced from the solution of tetrafluoroethylene and polyvinylidene fluoride copolymer (TeFE-PVDF) in the methylethylketone and dimethylformamide mixture in a ratio of 1:2 (v/v). Nonwoven materials surface morphology was researched with Quanta 200 3D scanning electronic microscope. Fiber diameter of at least100 fibers was measured by hand with Image J software.

The surface of nonwoven polymer materials formed by electrospinning and SBS method from TeFE-PVDF is shown in Figure 1. These results demonstrate that nonwoven polymer materials obtained by electrospinning consist of single unaligned nanofibers with an average diameter of (0.37±0.14) μm that are tightly packed and heavily intertwined. The materials formed by SBS show complex dimensional structure, mostly with loosely packed bundles aligned microfibers with an average diameter of (0.54±0.20) μm. They form the beams with the size from 1, 2 to 12, 8 μm depending on their quantity.



a b

Figure 1. SEM images of nonwovens materials formed by ES (a) and SBS (b) methods at 5000× magnification

Electrospinning materials can be used as membranes and western blot as they have narrower distribution of fiber diameters. SBS nonwoven materials with their characteristics globules are suitable for certain biomedical application where the main fibers provide a large surface area and globules act as a drug reservoir for controlled release of biomolecules.

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GUIDE FOR CALIBRATION OF α-, β- AND γ-RADIATION DETECTORS USED FOR SOIL RADON MONITORING

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Investigation of the radioactive soil gas radon dynamics, basically is used for short-term forecasts of the earthquakes in many countries. Methods of measurements are differing by types of registered ionizing radiation. For continuous soil radon monitoring the methods of ionizing radiation registration by using detectors operated in counting regime, are placed straight in the boreholes. These methods are cheaper by 1-2 times as opposed to methods based on alpha spectrometry, and this fact is allows to building of the network of radon monitoring stations. The other reason is that they allow getting, processes and analyzing data in quasi-real time scale. However, reliability of obtained results and methods of direct radon measurements in boreholes by the ionizing radiation was not investigated. Transfer of pulse counting rate into units of radon volumetric activity is made with multiplication on the correction coefficient, which is determined by comparison with results of certified radiometer in short and usually single experiment. The main task of this research was checking of reliability of radon measurement methods by direct registration of ionizing radiation in soil [1, 2]. Potential problems in detector calibration procedure and determining of correction coefficients based on revealed asynchronous behavior of radon and ionizing radiation time series are examined.