Title (en)

A METHOD FOR PRODUCTION OF MATERIALS HAVING ANISOTROPIC PROPERTIES COMPOSED OF NANOFIBRES OR MICROFIBRES AND AN APPARATUS FOR IMPLEMENTATION OF SAID METHOD

Title (de)

VERFAHREN ZUR HERSTELLUNG VON MATERIALIEN MIT ANISOTROPEN EIGENSCHAFTEN AUS NANOFASERN ODER MIKROFASERN UND VORRICHTUNG ZUM DURCHFÜHREN DES VERFAHRENS

Title (fr)

PROCÉDÉ DE PRODUCTION DE MATÉRIAUX PRÉSENTANT DES PROPRIÉTÉS ANISOTROPES ET COMPOSÉS DE NANOFIBRES OU DE MICROFIBRES, ET APPAREIL POUR METTRE EN OEUVRE LEDIT PROCÉDÉ

Publication

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Application

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Priority

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Abstract (en)

[origin: WO2013000442A1] The present invention relates to a method of production of two-dimensional or three- dimensional fibrous materials of fibres (5) with a diameter ranging from microfibres to nanofibres, in which at first the fibre (5) is continuously drawn out of a solution (1) and is pulled to a rotary set (11) of n electrodes (6) by means of electrostatic field. The individual electrodes (6) of the set (11) are arranged at regular spacing to each other and at the same distance from the set (11) of electrodes (6) rotation axis and parallel with it. The fibre (5) is wound on the rotating set (11) of the electrodes (6). After a layer (8) of the fibres, (5) was formed, the electrostatic field is disconnected and rotation of the set (11) of the electrodes (6) is stopped, and the layer (8) of the fibres (5) formed in a field between two adjacent electrodes (6) is removed. In a subsequent step the rotating set (11) of the electrodes (6) turn through an angle of 360/n°, and the layer (8) of the fibres (5) formed between two adjacent electrodes (6) in the field adjacent to the field, from which the layer (8) was removed in preceding step, is removed. This step is repeated in total n-times. The solution also relates to an apparatus for implementation of the method, the apparatus comprising at least one spinning nozzle (3) connected to a first potential, the pivoted set (11) of the electrodes (6), facing the nozzle and the accumulator (7) for collecting fibres (5) settled between two adjacent electrodes (6). The accumulator (7) is, in relation to the electrodes (6), arranged movably in the direction of longitudinal axes of the electrodes (6) for collecting the fibres (5) settled between two adjacent electrodes (6), and is, in relation to the electrodes (6), arranged movably in the direction perpendicular to the longitudinal axes of the electrodes (6) for it being brought into engagement to collect fibres; (5) settled between two adjacent electrodes (6), and being brought out of engagement after finishing the collection of fibres (5) settled between two adjacent electrodes (6).

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