?- ALUMINA FIBERS BY ELECTROSPINNING FOR Cd^{2+} REMOVAL IN AQUEOUS MEDIA

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The manufacture of alumina (Al_2O_3) fibers by the sol- gel electrospinning methods offers an alternative for production of ceramic materials that can be used in multiple applications like absorbent materials. In the present investigation, alpha alumina fibers were obtained by the sol- gel and electrospinning techniques methods, from aluminum nitrate and Polyvinyl pyrrolidone. The green fibers obtained from the ceramic precursors presented a continuous form, random distribution, small beads and had a diameter of 350 ± 95 nm. Based on the thermal analysis of the fibers, characterized phases of alumina fibers was a gamma and alpha. FTIR and XRD demonstrated that amorphous, ?- and ?- Al2O3 polymorphs were present in fibers treated at 800°C, while ?- Al2O3 was formed in samples at approximately 1000°C. At 1600°C the shape of fibers was preserved, with mean diameter of 150 ± 40 nm.

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