

研究快报

静电纺丝法制备硫酸化的二氧化锆/二氧化硅复合纤维

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摘要 将电纺丝技术与溶胶-凝胶技术相结合, 制备了SZ粒子分布于SiO₂纤维外壁的硫酸化的二氧化锆/二氧化硅复合纤维. 与常见的SZ复合催化剂相比, 采用SiO₂纤维负载SZ不仅可以解决粉体材料带来的难以与反应体系分离等弊病, 同时功能粒子SZ分布与纤维外壁的结构也提高了功能粒子的利用率.

关键词 [静电纺丝](#) [硫酸化的二氧化锆](#) [二氧化硅](#) [复合纳米纤维](#)

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Preparation of Sulfated Zirconia/Silica Complex Nanofibers by Electrospinning Method

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Abstract Sulfated zirconia/silica(SZ/SiO₂) complex nanofibers were prepared by combining electrospinning technique and sol-gel method. First, a silica sol was electrospun at a voltage of 12 kV, then the as-electrospun silica nanofibers were immersed into a sulfated zirconia sol afterwards with a thermal treatment to obtain the SZ/SiO₂ complex nanofibers. These fibers were examined by SEM, TEM, FTIR, XRD and SPS. The results indicate that the SZ nanoparticles with the average diameter of about 8 nm were dispersed on the surface of silica fibers which had an average diameter of about 170 nm. The complex nanofibers had an amorphous structure. The observation of the surface-related transitions at the SPS spectrum indicates the presence of positive charges on the surface of the complex fibers.

Key words [Electrospinning](#) [Sulfated Zirconia](#) [Silica](#) [Complex nanofibers](#)

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