

## **Fabrication, characterization and magnetic properties of Fe-doped SrTiO<sub>3</sub> nanofibers**

We report the fabrication of Fe-doped SrTiO<sub>3</sub> nanofibers by electrospinning a precursor mixture of iron nitrate/Diisopropoxytitanium bis(acetylacetonate)/PVP, followed by calcination treatment of the electrospun composite nanofibers. The Fe-doped SrTiO<sub>3</sub> nanofibers were characterized by scanning electron microscopy (SEM), X-ray diffraction (XRD) and transmission electron microscopy (TEM). The magnetic properties were measured by vibrating sample magnetometry (VSM). Room temperature magnetization results showed ferromagnetic behavior in the calcined samples having clear hysteresis ferromagnetism in the field range of  $\pm 5000$  Oe. The saturation specific magnetization ( $M_s$ ) increased with increasing Fe proportion. The  $M_s$  and coercivity ( $H_c$ ) values of the samples were in the ranges of 0.1 – 1.35 emu/g and 128 - 234 Oe, respectively.

Keywords : Electrospinning, nanofibers, Strontium titanate, ferromagnetic and diluted magnetic oxide.

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