Mansoor Keyanpour-Rad, J Material Sci Eng 2015, 4:4
http://dx.doi.org/10.4172/2169-0022.C1.026

OMICS International
conferenceseries.com

International Conference and Expo on
Ceramics

August 17-18, 2015 Chicago, USA

Synthesis of mullite nanofibres by electrospinning of solutions containing different proportions of polyvinyl butyral

Mansoor Keyanpour-Rad
Materials and Energy Research Center (MERC), Iran

In this paper, the synthesis of continuous mullite ($3Al_2O_3$. $2SiO_2$) nanofibres by combination of the sol–gel and electrospinning technique is reported. To find out the optimum viscosity of the electrospinning solution for obtaining the high quality mullite nanofibers, solutions containing different amounts of polyvinyl butyral (PVB, 0-8 wt. %) and the precursor sol were prepared for the electrospinning process. The precursor sol was made by using proper amounts of aluminium isopropoxide (AIP), hydrated aluminium nitrate (AN) and tetraethyl orthosilicate (TEOS). Crystal phase, microstructure and thermal decomposition behavior of the electrospun mullite nanofibres were investigated by conventional methods of analysis. The optimal amount of PVB in the electrospinning polymeric solutions was found to be between 4 and 6 wt% and the mullite nanofibres obtained as such were pure, smooth and uniform with diameter sizes of 85-130 nm after calcination at 1200°C.

Biography

Mansoor Keyanpour-Rad received his BS and MS in organic chemistry from California State University (San Jose , California , USA) in 1968 and 1972, respectively and PhD in polymer science and technology from Liverpool University (England) in 1977. He has worked as an organic chemist at Stanford Research Institute, SRI (Menlo park, California, USA) from 1968 till 1974. He has worked as a researcher at the Materials and Energy Research Center (MERC) for 30 years. Through these years, He has worked on many research projects in which polymers have had critical roles and applications in their syntheses and properties. He is a full professor and has served as an International Advisory and Editorial Board member in many world scientific journals. He has published many scientific papers in the word journals and international conference proceedings.

m.kianpour984@yahoo.com

Notes: