Abstract Submitted
for the OSS18 Meeting of
The American Physical Society

Probing Phase Transitions in Ceramic Nanofibers NENAD STOJILOVIC, University of Wisconsin Oshkosh — In this study we employ sol-gel and electrospinning methods, followed by annealing at different temperatures, in order to produce ceramic titania and alumina nanofibers. Titania nanofibers display anatase, rutile and anatase-rutile structures, and we make an attempt to better understand complex competition of these phases during annealing process. Alumina nanofibers, due to the coexistence of various structural phases with overlapping Bragg's peaks, are especially challenging to study using X-ray diffraction method. With the goal to better understand crystal phase formations and transitions in these nanofibers, and to ultimately produce materials with desired crystal structures, we vary annealing temperatures and heating rates and perform measurements using powder X-ray diffraction (XRD), scanning electron microscopy (SEM), and X-ray energy dispersive spectroscopy (XEDS).

Nenad Stojilovic
University of Wisconsin Oshkosh

Date submitted: 02 Mar 2018 Electronic form version 1.4