

2P274 DIELECTRIC STRENGTH OF RYCYCLED POLY ETHYLENE TEREPHTHALATE (r-PET) NANOFIBERS FROM WASTE BOTTLES FOR INSULATING MATERIALS.

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Abstract: In this study, we report very first time insulating material using r-PET nanofibers via electrospinning technique. The r-PET nanofibers were fabricated from waste drinking bottles. Nanofibers have an advantage to high surface area and insulating property was investigated using dielectric strength of r-PET nanofibers. Since r-PET execute great amount of mechanical strength; therefore, it was selected as insulating material and furthermore, it was collected from waste drinking bottles, so it can reduce cost and clean the environment. In this report, breakdown voltage of r-PET nanofibers was analyzed using international standard ASTM D149. To examine the surface morphology and chemical structure of r-PET nanofibers; scanning microscopy (SEM) and Fourier transform infrared (FTIR) were used respectively.

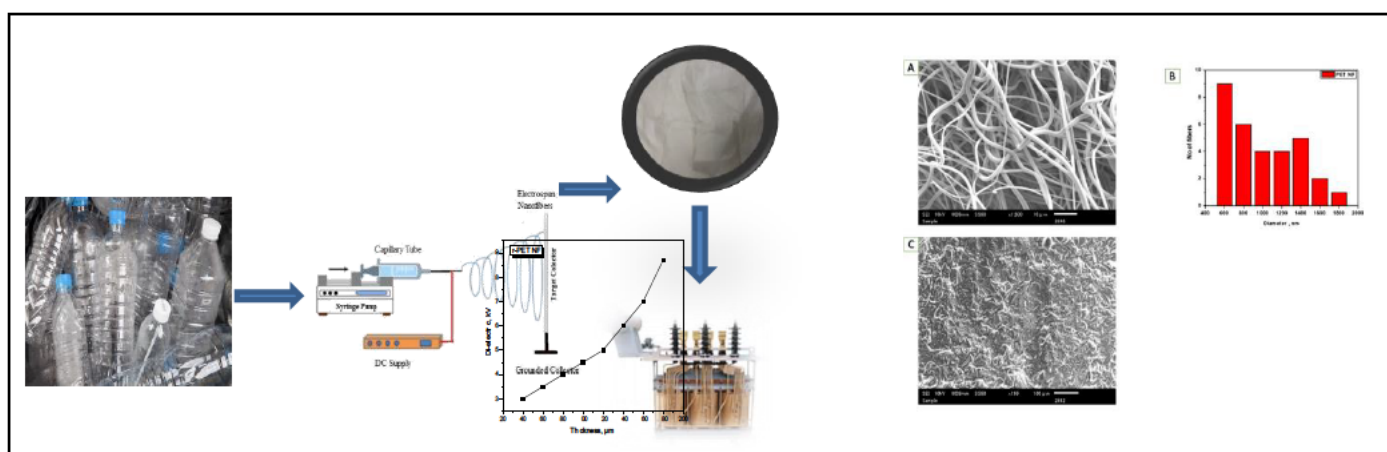


Fig. Show the r-PET nanofibers were successfully fabricated via electrospinning method and were first time reported for insulation application (electrical transformer). Nanofibers have advantage of high surface area and we successfully got high dielectric strength in r-PET nanofibers (8.7 kv/mm). The results shows that r-PET nanofibers have good stability with heat. SEM morphology also reveals that r-PET nanofibers have average diameter 800 μm has smooth surface.

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