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## The Facile Preparation of Aramid Insulation Paper from the Bottom-Up

### Nanofiber Synthesis

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**Abstract:** Aramid paper based on poly (*p*-phenylene terephthamide) (PPTA) is a typically excellent insulation material, but the common preparation is complex and tedious. In this work, using the PPTA based aramid nanofibers (ANFs) synthesized by the bottom-up polymerization induced self-assembly process, insulation paper was fabricated through the vacuum assisted filtration without any high pressure or high temperature treatment. Importantly, the ANF paper exhibits improved electrical insulation, desired mechanical strength and good thermal stability, which is attributed to the tightly weaved architecture formed by the nanofibers.

**Key words:** poly (*p*-phenylene terephthamide); nanofiber; insulation paper

### 1. Introduction

In the high-performance insulation materials, poly (*para*-phenylene terephthamide) (PPTA) based paper is much desired as insulation materials owing to the high mechanical strength, good thermal stability and favorable insulation property [1-2]. It

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