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# Moisture Absorption Analysis of LLDPE-NR Nanocomposite for HV Insulation

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**Abstract :** Insulation for high voltage application that has been service for a very long time is subjected to several types of degradation. The degradation can lead to premature breakdown and definitely will spent highly cost to replace the cable. Thus, there are many research on nano composite material get serious attention attention due to their abilities to enhance electrical performance by addition of nano filler. In this paper, water absorption of Low Linear Density Polyethyelene (LLDPE) with different amount of nano filler added is studied. This study is necessary to be conducted since most of electrical apparatus such as cable insulation are dominant used especially in high voltage application. The cable insulation are continuously exposed in uncontrolled environment may suffer degradation process. Three type of nano fillers, was used in this study are: Silicon dioxide (SiO2), Titanium dioxide (TiO2) and Monmorillonite (MMT). The percentage absorption of water was measured by weighted using high precision scales for absorption process up to 92 days. Experimental result demonstrate that SiO2 absorb less water than other filler while, the MMT has hydrophilic properties which it absorbs more water compare to another sample.

**Keywords :** nano composite, nano filler, water absorption, hydrophilic properties
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