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Enrichment of used Transformer Oil using Activated Bentonite and Comparison of Various Transformer Oils with Vegetable Oil

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Abstract: The transformer is basic unit of distributed power generation system. The transformer uses oil as insulating medium to prevent the arcing, suppress the corona and improve the cooling. Traditionally the mineral oils are used as insulating oil for transformers. These oils are experiencing electrical, mechanical stress and chemical interaction with windings due to the high operating temperature throughout its presence in transformer. This causes the transformer oil to drop its property with respect to time. So there is need to change the oil after many years of use. The used oil either recycled or sent to dump causing environmental impact for its removal. In our present investigation the aged transformer oil is enriched by activated bentonite. In our investigation the vegetable oil is used instead of the traditional mineral oil. The used vegetable oil properties are reviewed once it's enhanced. The critical characteristics of insulating oil such as flash point, fire point, viscosity and Breakdown Voltage (BDV) is compared before and after enrichment. The result proves that the activated bentonite is certainly improving the property of the transformer oil for its reuse.
Keyword:*Transformer oil, Vegetable oil, Mineral oil and Transformer cooling.*

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