

**A Basic Study on the Detection of Electrical Fire in the Substation by
Detection of Odor Substances**

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In order to detect electrical fire by detection of odor substances released during overheating, we investigated the kinds of volatile substances which are released from the insulator during overheating, and the relationship between the emission from the insulator and the heating temperature. As a result, it was found out that the volatiles released from the insulator during overheating is the plasticizers mixed in the substrate, and they are released rapidly at $100^{\circ}\text{C} \sim 150^{\circ}\text{C}$, lower than the temperature at which the insulator is burn out. In addition, we have confirmed that the volatiles released during overheating can be detected by a gas sensor that can detect low concentration of volatiles.