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M1Po2D-01 [45]: DC Surface Flashover Characteristics of ZnO/EP Composites at 77K

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Epoxy resin nanocomposites are widely used in high voltage direct current (HVDC) high temperature superconducting (HTS) power cable. In this paper, the DC flashover characteristics of ZnO/EP composites at both room temperature and 77K were studied. The samples were made by dispersing ZnO nanoparticles into EP resin with weight percentages of 0%, 1%, 3%, 6% and 10% respectively. The experiment was carried out under a cryogenic system in which DC high voltages ranging from 0kV to 100kV were supplied. The results show that the surface flashover voltages changed with the increase of ZnO content at 77K, and the surface flashover voltages at 77K were higher than that at room temperature for composites with the same ZnO content.

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