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Surface Flashover Properties of Polytetrafluoroethylene Modified by Ion Implantation in Vacuum

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Surface characteristics of Insulator effect its surface flashover performance obviously, appropriate surface treatment can increase the surface flashover voltage. Ion implantation technology is an effective surface modification tool, it can change the roughness, resistivity and adsorbability on the insulator surface. Polytetrafluoroethylene (PTFE) was modified by carbon ion and nitrogen ion by using a electron cyclotron resonance (ECR) ion source and a MEVVA ion source. The surface flashover voltage were measured on the experimental platforms of surface characteristics in vacuum before and after modification, Also the characteristies and microstructure of the implanted layer were studied by using the AFM(atomic force microscopy) and XPS(X-ray photo electron spectra) and find the influencing factors on surface flashover properties of PTFE modified by ion implantation.

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