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## TAILORING INSULATION SURFACE CHARGE BEHAVIORS: FROM HAZARDS TO FUNCTIONALITY

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### ABSTRACT.

Charge accumulation on the insulation surface distorts the local electric field, triggers partial discharge and flashover, which poses potential threats to the insulation system of the high voltage apparatus. It is an urgent and important requirement to tailor surface charge behaviors of dielectrics for modern electrical and electronic devices.

In this report, we introduce two approaches for tailoring the surface charge behaviors, which are achieved by converting the hazard surface charges into functional charges by means of material modification. To be more specific, **a novel surface charge adaptively controlling spacer used in DC GIL is developed, and a surface partial discharge mitigation method is put forward.**


We do hope that the two surface charge tailoring approaches mentioned in this report may shed some light on the novel insulation design of DC electric power equipment, DC generators, power electronic devices, printed circuit board (PCB) layout, and various integrated electrostatic sensors and actuators.

### Date and Time


Date: **18 Nov 2021**

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## Speakers

Dr. Chuanyang Li