

Advance insulation Dielectrics- Environmental Friendly SF6 Substitute
Sectional Editor: Dengming Xiao

• **Scope of the Thematic Issue:**

Gas insulating medium has incomparable characteristics of other insulating medium: no aging, service life is almost no limit and long overhaul period, etc. SF6 gas is the most widely used gas in power equipment. But the gas has strong greenhouse effect and its global warming potential is 23500 that of CO2 gas. In 1997, SF6 was regarded as one of the six greenhouse gases in Kyoto Protocol. Therefore, the search for a new environmental friendly SF6 alternative gas is agent and has become a research focus in electrical engineering.

SF6 is a kind of strong greenhouse gas, and a new type of environmental friendly gas Insulation medium is urgently needed to replace SF6 in power equipment. This paper will elaborate several stages of gas insulation and analyze the research status of environmental friendly Insulating gas. This paper will also review the basic physical and chemical properties and Insulation properties of SF 6 substitute, analyzes the advantages and disadvantages of different Gases, and makes some suggestions for the future research.

Keywords: SF6 substitute, Insulation, Gas Discharge, Environmental Friendly Gas, Material, Electrical Property

Sub-topics:

The sub-topics to be covered within the issue should be provided:

- Gas discharge
- Gas Insulation
- Insulation characteristics of new insulation gas
- Current interruption characteristics of new insulation gas
- Decomposition of new insulation gas
- Insulation and property prediction

Tentative titles of the articles

1. Insulation characteristics of different SF6 substitutes.
2. Arc quenching characteristics of environmentally friendly insulating gas.
3. Research progress on the degradation characteristics of insulators with C4F7N gas mixture.
4. Decomposition characteristics of different SF6 substitutes.
5. Simulation study on the current interruption characteristics of C4F7N gas mixture.
6. Research progress on the swarm parameters of SF6 substitute.
7. Research prospect of insulation and partial discharge characteristics of new insulating gas.
8. Prospect of new technology in environment-friendly gas research.

Schedule:

- ✧ Thematic issue submission deadline: 30th October 2022

Contacts:

Sectional Editors Name: Dengming Xiao
Affiliation: Shanghai Jiao Tong University
Email: dmxiao@sjtu.edu.cn