

Anode Jet in High Current Vacuum Arc

Xiaolong Huang¹, Shuangwei Zhao¹, Tao Sun¹, Wenjun Ning¹, Lihua Zhao¹, Shenli Jia¹

¹ College of Electrical Engineering, Sichuan University, Chengdu, People's Republic of China

e-mail (speaker): xlhuang@scu.edu.cn

During the process of high current vacuum interruption, excessive anode temperature can easily cause the appearance of anode jet, which means that the vacuum switch has reached its breaking limit. This talk aims to the anode jet in the high current vacuum arc, quantitatively analysis will be carried out for the characteristics of the key parameter and the distribution characteristics of the anode jet with the electrical measurement and precision plasma optical diagnosis, and a comprehensive transient model of the anode jet will be established. Based on the experiment and simulation work, the internal particle transport characteristics and the influencing factors of the anode jet will be systematically studied to establish the correlation between the control parameters and the particle transport characteristics of the anode jet. By reconstructing the evolution process of the anode jet and combining the dynamic analysis method, the dynamic developing process and the temporal and spatial evolution law of the anode jet will be studied comprehensively, and the evolution mechanism and its influencing factors of the

anode jet will be clarified. The prospective achievements could provide theoretical basis and technical guidance for delaying or suppressing the appearance of the anode jet and improving the breaking ability of the vacuum switch, and promote the developing of the vacuum switch towards high voltage and high current.

This study is supported by the State Key Laboratory of Advanced Power Transmission Technology (Grant No. GEIRI-SKL-2022-011).

References

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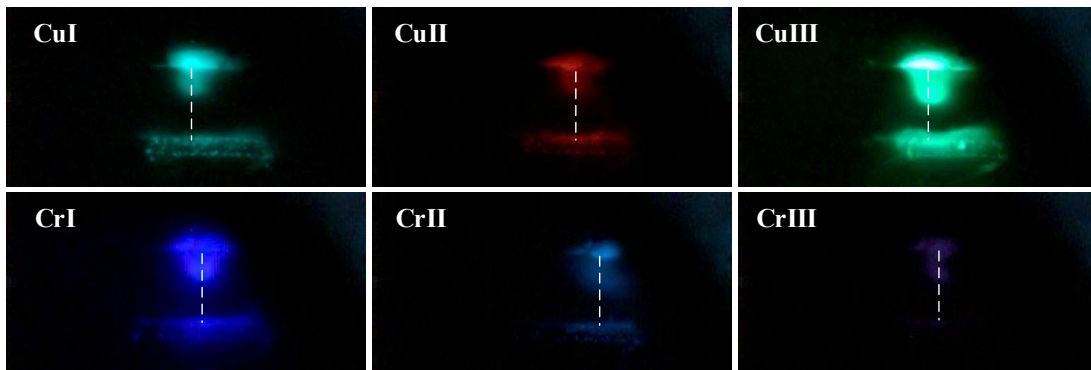


Fig-1 Anode jet component interelectrode distribution map

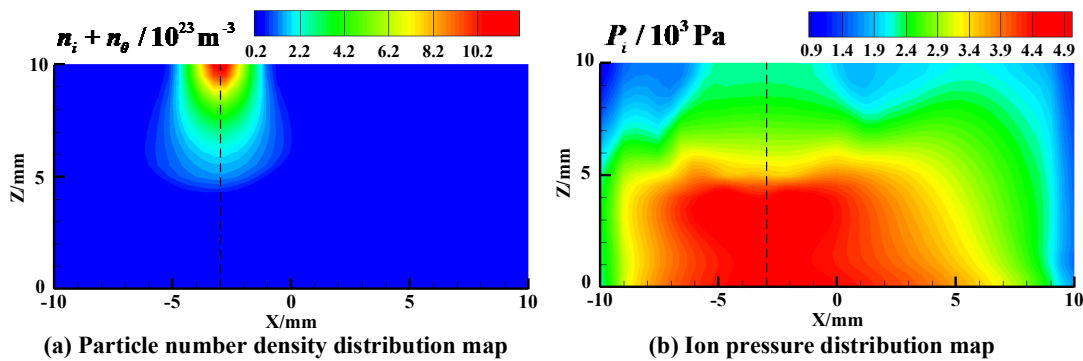


Fig-2 Schematic diagram of anode jet simulation results