

## Study on the Relationship between the Emission Property of Barium-Tungsten Cathode and Micro-Area Activity

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**Abstract :** In order to study the activity of the coated aluminate barium-tungsten cathodes during activation, aging, poisoning and long-term use. Through a set of hot-cathode micro-area emission uniformity study device, we tested the micro-area emission performance of the cathode under different conditions. The change of activity of cathode micro-area was obtained. The influence of micro-area activity on the performance of the cathode was explained by the ageing model of barium-tungsten cathode. This helps to improve the design and process of the cathode and can point the way in finding the factors that affect life in the cathode operation.

**Keywords :** barium-tungsten cathode, ageing model, micro-area emission, emission uniformity

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