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Influence of the target $(BaSrCa)CO_3$ manufacturing method and the working gas on the emission properties of molecular sputter-deposited oxide microcathodes

G. A. Zhabin[1] and A. V. Konnov[2]

[1] JSC «RPC «Istok» named after Shokin»
2A Vokzalnaya st., Fryazino, Moscow Region, 141190, Russia
E-mail: gazhabin@istokmv.ru

[2] JSC «RPC «Toriy»
52 Obrucheva st., Moscow, 117342, Russia

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The paper investigates the influence of the method of manufacturing a carbonate target $(BaSrCa)CO_3$ and its composition on the emission properties of molecular sputter-deposited oxide microcathodes (MSOC) used in cyclotron protective devices (CPD). It is shown that microcathodes with an emission coating deposited during the sputtering of a target manufactured using plasma technology have increased emission activity compared with the use of a target manufactured by pulverization. The emission characteristics of MSOC sputtering in gas mixtures with argon and xenon and their durability are given.

Keywords: molecular sputter-deposited oxide microcathode, carbonate target, pulverization method, plasma technology, ion-plasma sputtering, emission characteristics, durability.

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