

MECHANISMS OF THE CONTRACTION
OF AN ARC DISCHARGE. 2. PECULIARITIES
OF THE CONTRACTION OF A LOW-CURRENT
ARC IN THE MIXTURE OF A NOBLE GAS
WITH COPPER

P.V. Porytskyy

Institute for Nuclear Research,
Nat. Acad. Sci. of Ukraine
(47, Nauky Prosp., Kyiv 03680, Ukraine;
e-mail: poryts@kinr.kiev.ua)

S u m m a r y

The influence of properties of the gaseous medium on the processes of contraction (self-constriction) of an arc discharge in the atmosphere of the mixture of a noble gas with copper is considered. The calculation are carried out, and it is shown that the degree of constriction of an arc discharge is determined by both the thermophysical characteristics of the gaseous medium and the effective characteristics of electron-atom collisions. We have studied the influence of both the Ramsauer effect and the shape resonance on a character of the contraction of an arc discharge. It is shown that the influence of the Ramsauer effect on the contraction of an arc may be neutralized in gaseous mixtures.