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# THERMAL SCIENCE

## International Scientific Journal

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### QUASI-EQUILIBRIUM CHANNEL MODEL OF AN ARC OF A CONSTANT CURRENT

#### ABSTRACT

The rather simple method of calculation of electronic and gas temperature in the channel of arc of plasma generator is offered. This method enters in frameworks of self-consistent two-temperature channel model of an electric arc. The given method enables at designated parameters of the discharge (current intensity in the discharge, power put in the discharge) to gain radial allocation of gas and electronic temperatures in a non-conducting zone of an arc of a constant current with enough good precision. The received results can be used in model and engineering calculations for estimates of gas and electronic temperatures in the channel of an arc plasma generator.

#### KEYWORDS

[low-temperature plasma](#), [constant current plasma generators](#), [two-temperature model](#), [engineering approach](#)

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