

IMPROVED CRITERION OF NONEQUILIBRIUM
IN ELECTRIC ARC PLASMA INDUCED
BY RADIATION TRANSFER

Yu.I. Lelyukh

Gas Institute, Nat. Acad. of Sci. of Ukraine
(39, Degtyarivs'ka Str., Kyiv 03113, Ukraine;
e-mail: *yult84@ukr.net*)

S u m m a r y

More accurate calculations, which allowed the principal role of radiation emission processes in the formation of a local thermodynamic equilibrium (LTE) state in plasma to be estimated, are carried out. The solution of the problem is obtained in the framework of the LTE approximation with regard for the radiation emission and radiation losses in plasma. The results of numerical simulation testify to a deviation of the population at the excited levels of a copper atom from the equilibrium distribution, which is induced by the resonance radiation absorption onto both the ground and metastable levels.