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Net emission coefficients of low temperature thermal iron-helium plasma

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Abstract

Net emission coefficients of low temperature thermal iron-helium plasma mixture at atmospheric pressure are presented. The calculations are made assuming the plasma is in the local thermodynamic equilibrium at a pressure of 0.1 MPa. The results are presented for several values of helium mass fraction in the mixture (between 0 and 1), for a temperature range 3000 –25000 K and three characteristic plasma dimensions; 0 – corresponding to the optically thin case, and 1 mm and 10 mm. The values of net emission coefficients allow the estimations of total radiation losses in iron-helium plasmas.