Production of Negative Ion Rich Plasma in Electronegative Gases

M. Bacal and H. J. Doucet

Production of negative ion rich plasmas in various electronegative gases is analyzed according to production and loss processes. Electrostatic trapping of slow electrons and negative ions yields to high density of negative ions up to 10^{11} p/cm^{-3}. The effect of distribution function of the different species of particles is investigated. Experimental results will be discussed for NO-NO_2 mixtures, CO_2, O_2, H_2, and CO_2-He-N_2 mixtures.

Dr. M. Bacal
Laboratoire P.M.I.
Groupe de Recherche du CNRS
Ecole Polytechnique, 91120
Palaiseau
France