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Theoretical Analysis of Potential Distribution Across Plasma Sheath in Siemen's Type Vessel

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Abstract

The electrons and ions in plasma have Maxwell-Boltzmann's distribution. These species arrange themselves according to the Poisson's equation and give self consistent potential profile in the sheath. Applying the boundary conditions, the expression for sheath potential has been obtained for Siemen's ozonizer type discharge. It has also been found that on the basis of above calculations, the thickness of sheath, near a probe when floating, is of the same order of magnitude as the Debye's shielding distance.

Keywords: *Ozoniser discharge, Plasma sheath, Siemen's type vessel*