

**ELECTROMAGNETIC DESALINATION OF SALTY
WATER FOR IRRIGATION PURPOSES**

By

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LIST OF SYMBOLS

V	Potential difference = applied voltage, in volts.
J, J ₀	Current density with and without magnetic field, in amperes (= I/A).
A	Cross-section area of electrode (= ℓ d).
ℓ , d	Dimensions of the rectangular electrodes, in meters.
I	Current intensity passing through the electrolytic solution, in milliamperes (mA).
I ₀	Excitation current passing through the magnet, in amperes.
ρ	Current ratio = I/I_0
L, L ₀	Effective conductance of solution with and without magnetic field (= $\partial I / \partial V$).
β	Magnification ratio (= I/L_0).
$q_{\pm}$	Charge of positive and negative ions, in coulombs.
$U_{\pm}$	Velocity of positive and negative ions in the direction of current I (in Y-direction), in meter/sec.
$\mu_{\pm}$	Mobility of positive and negative ions, in meter/sec/Newton.
C	Ion concentration.
θ	Degree of dissociation.

- N Avogadro's number = 6.02×10^{23} moles/gram molecule.
- n Number of ions = ion density (= $\propto$ OH).
- σ Electrical conductivity.
- E, E' Electric field intensity, in volta/meter.
- B Magnetic flux, in weber/meter².
- E_x Potential gradient developed in solution in x-direction.
- T Absolute temperature.
- t Time of fields application, in hours.
- ω Angular velocity.
- C_0, C_1, C_2 Initial, minimum and maximum concentrations in the electrolytic cell.
- R General gas constant = 8.3 Joule/degree/molecule.
- F Faraday constant = 96500 coulomb/equivalent.
- θ Phase angle between the electric and magnetic fields.

LIST OF FIGURES

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