ELECTROMAGNETIC DESALINATION OF SALTY WATER FOR IRRIGATION PURPOSES

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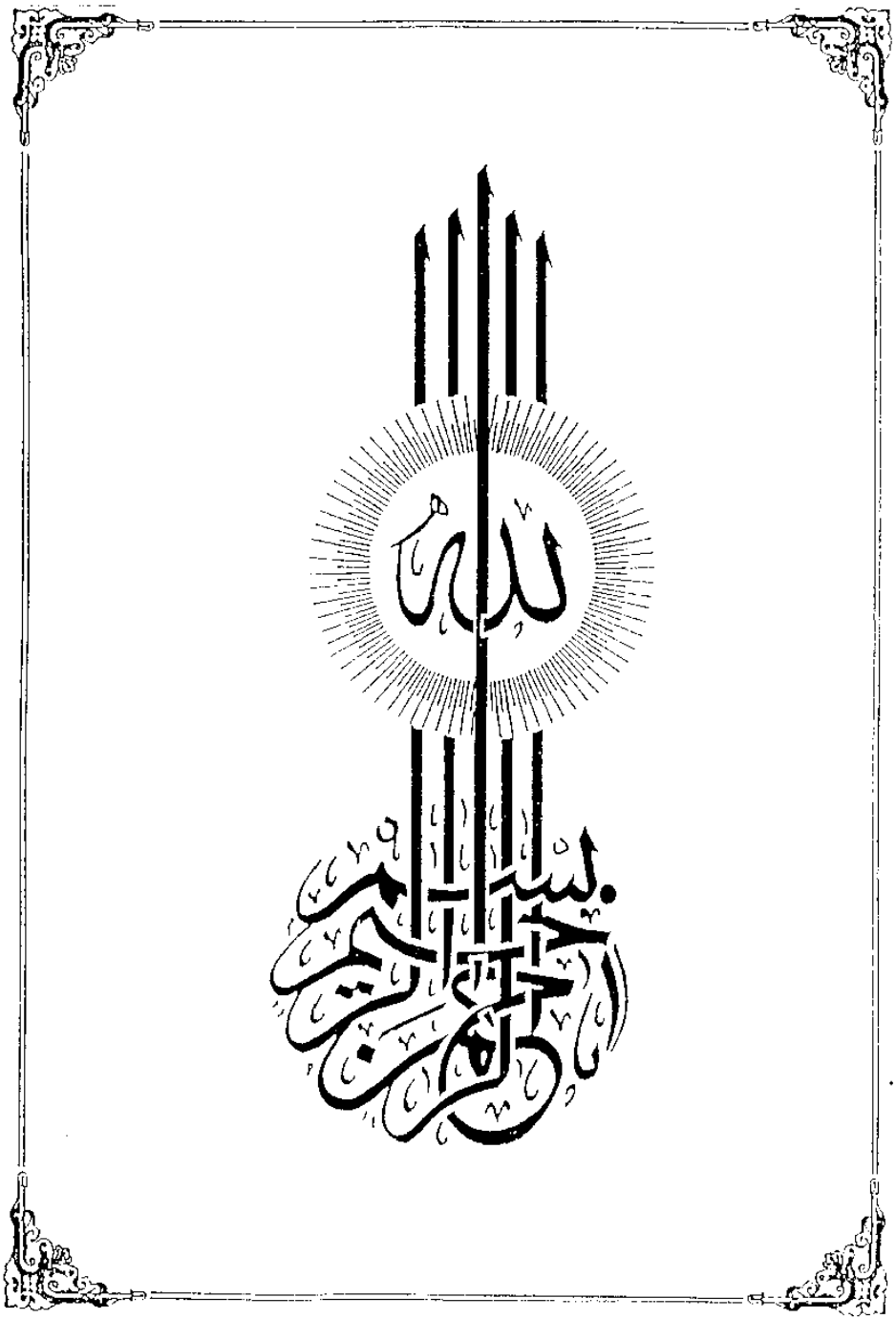

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LIST OF SYMBOLS

V	Potential difference = applied voltage, in volts.
J, J_o	Current density with and without magnetic field, in amperes (= I/A).
A	Cross-section area of electrode (= ℓd).
ℓ, d	Dimensions of the rectangular electrodes, in meters.
I	Current intensity passing through the electrolytic solution, in milliamperes (mA).
I_o	Excitation current passing through the magnet, in amperes.
ρ	Current ratio = I/I_o
L, L_o	Effective conductance of solution with and without magnetic field (= $\partial I/\partial V$).
Λ	Magnification ratio (= L/L_o).
$q_{\pm}$	Charge of positive and negative ions, in coulombs.
$v_{\pm}$	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 (= $\propto$ CN).
σ	Electrical conductivity.
E, E'	Electric field intensity, in volts/meter.
B	Magnetic flux, in weber/meter^2.
ϵ_x	Potential gradient developed in solution in x-direction.
T	Absolute temperature.
t	Time of fields application, in hours.
ω	Angular velocity.
C_o, C_1, C_2	Initial, minimum and maximum concentrations in the electrolytic cell.
R	General gase constant = 8.3 Joule/degree/molecule.
F	Faraday constant = 96500 coulomb/equivalent.
θ	Phase angle between the electric and magnetic fields.

LIST OF FIGURES