













[23] Hassen, W., Borjini, M.N., Ben Aissia, H. (2012). Enhanced heat transfer by unipolar injection of electric charges in differentially heated dielectric liquid layer. FDMP, 8(4): 381-395.

**NOMENCLATURE**

$C = \frac{q_0 \times L^2}{\epsilon_0 \times \Delta v}$	Dimensionless number which measure the injection strength
$E$	Dimensionless electric field
$g$	Acceleration of gravity, m/s <sup>2</sup>
$K_0$	Ionic mobility of ions in the fluid, m <sup>2</sup> /sV
$M = \frac{1}{k_0} \left( \frac{\epsilon_0}{\rho} \right)^{0.5}$	dimensionless number characterizing EHD properties of the fluid
$Pr$	Prandtl number
$q$	electric charge density, C/m <sup>3</sup>
$R = \frac{T}{M^2}$	Electric Reynolds number

$Ra = \frac{g \times \beta \times \Delta \theta \times L^3}{\nu \times \alpha}$	Thermal Rayleigh number
$T = \frac{\epsilon_0 \times \Delta V}{\rho \times \nu \times K_0}$	Electric Rayleigh number
$U$	Dimensionless velocity
$V$	Dimensionless electric potential
$L$	Collector width, m
$W$	Chimney tower width, m
$h$	Height of the collector, m
$\tilde{p}$	Modified pressure including pressure

**Greek symbols**

$\beta$	coefficient of thermal expansion, K <sup>-1</sup>
$\epsilon_0$	Electric permittivity of vacuum, F/m
$\theta$	Dimensionless Temperature
$\mu, \nu$	Dynamic and kinematic viscosity, Pa/s, m <sup>2</sup> /s
$\rho$	Density, kg/m <sup>3</sup>