Notations

Following notations are used in this thesis.

$\mathbb{X}$	Universal set
E	Collection of fuzzy numbers
E^n	Collection of fuzzy numbers in n dimensions
$\tilde{f}$	Fuzzy function
${}^{\alpha}\tilde{f}$	$\alpha - cut$ for fuzzy function
${}^{\alpha}\tilde{X}$	$\alpha - cut$ for fuzzy variable
${}^{\alpha}\tilde{f} = \left[\underline{f}, \overline{f}\right]$	Parametric form of fuzzy function
${}^{\alpha}\tilde{X} = \left[\underline{X}, \overline{X}\right]$	Parametric form of fuzzy variable
I, t	Time Interval, time
$\dot{\tilde{X}}$	Derivative of fuzzy variable
$\tilde{X}(0)$	Fuzzy initial condition
$\tilde{A}$	Fuzzy matrix of $n \times n$
$\widetilde{B}$	Fuzzy column matrix of $n \times 1$
$\otimes$	Fuzzy Multiplication
$\ominus$	Fuzzy difference
$\oplus$	Fuzzy Addition
$\tilde{R}$	Fuzzy Radius of Convergence
$\mathcal{L}$	Fuzzy Laplace Transform
$\mathbb{L}$	Highest order fuzzy linear differential (mgH) operator
N	Nonlinear operator
$\mathbb{R}$	Differential operator order less than $\mathbb{L}$
d	Metric
a	Ambient
b	Backplate
T_a	Ambient temperature
R_e	Reynolds number
$\dot{m}$	Air mass flow rate (kg/s)

W	Width of Collector (m)
U_l	Overall heat loss coefficient $(W/m^2\ K)$
F	Collector Efficiency Factor
k	Conductivity of the fin $(W/m\ K)$
τ'	Transmittance
α'	Absorbance
s	Depth of air flow section (or channel height) (m)
G_t	Solar Radiation (W/m^2)
$h_{r,p-b}$	Radiative heat transfer coefficient between absorber plate and back plate
μ	Dynamic Viscosity