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NOMENCLATURE

A_{ch}	Cross-sectional area of the desiccant channel
U_{ch}	Air flow speed inside channel
U_f	Air flow speed at the desiccant wheel face
$C_{b,m}$	Mean specific heat for desiccant bed (J/kg_d . K)
C_a	Mean specific heat for moist air (J/kg_a . K)
D_H	Hydraulic diameter (m)
f_c	Actual mass and heat transfer area / unit volume of the air gap (m^{-1})
G_{ch}	Superficial mass flux (kg/m^2. s)
h_w	Heat of wetting (J/kg)
i_a	Specific enthalpy of the moist air (J/kg)
i_d	Specific enthalpy of the desiccant bed (J/kg)
K_m	Coefficient of mass transfer (kg . m^2/s)
L	Passage length (m)
$\dot{m}_a$	Air mass flow rate per channel (kg/hr)
q_z	Specific energy transfer rate through the boundary (w/m^3)
T	System equilibrium temperature (°K)
t_w	Wall temperature (°C)
t	Air temperature (°C)
W	Water content of desiccant (kg / kg)
ε_p	Packing filling factor
Φ	Relative humidity
ρ_a	Density of air (kg/m^3)
ρ_d	Density of dry desiccant material (kg/m^3)
τ	Time (sec.)

Subscript

a	Air
a, d	Dry air
d	Desiccant
d, d	Dry desiccant
d, w	Wetted desiccant
b	Desiccant bed
ch	Air channel
s	Cross sectional area of the substrate carrying material
w, l	Water (liquid)
w, v	Water (vapor)