CONTENTS

LIST OF TABLES

LIST OF FIGURES

Content

LIST OF SYMBOLS AND ABBREVIATIONS

%	Percentage
°C	Degree Celcius
2D, 3D	Two dimensional, Three dimensional
A	Absorbance
a, b, c, d, A, B, C	Coefficients of the equations
Adeq	Adequate
Adj	Adjusted
ADOGA	American Dehydrated Onion and Ginger Association
ANOVA	Analysis of variance
ASHRAE	American Society for Heating Refrigeration and Air Conditioning
avg	Average
a_w	Water activity
b	Cell path used, cm
c	Moisture concentration of the domain at any instant, mol.m^{-3}
c_0	Initial moisture concentration of onion slice, kg.m^{-3}
c_b	Bulk moisture concentration in the ambient, kg.m^{-3}
C_m	Specific moisture capacity
C_p, C_p	Specific heat of onion
c_b	Bulk concentration, mol.m^{-3}
CFD	Computational Fluid Dynamics
CV	Coefficient of variation
cz	Concentration gradient components dc/dz
D	Diffusion coefficient, m^2/s
D_m	Surface moisture diffusivity, m^2.s^{-1}
db	Dry basis, kg water.(kg dry solid) $^{-1}$
D_e	Effective moisture diffusivity, m^2.s^{-1}
DOF	Degrees of freedom
e.g.	Exempli gratia, for example
E_a	Activation energy, kJ.mol^{-1}
et. al.	Et alibi, and others
exp	Exponential
eqn	Equation
F_0	Fourier number
FAO	Food and Agriculture Organisation
FEM	Finite element method
FMC	Final moisture content
g	Grams
h	Heat transfer coefficient, W.m^{-2}.K^{-1}
h_m	Mass transfer coefficiemt, kg.m^{-2}.s^{-1}
h_Ta	Heat transfer coefficient of chamber air, W.m^{-2}.K^{-1}
Hg	Mercury
i.e.	Ed set, that is
ICAR	Indian Council of Agricultural Research
ITC	International Trade Centre

K	Kelvin
k	Thermal conductivity tensor, $W.m^{-1}.K^{-1}$
k_c	Mass transfer coefficient, $m.s^{-1}$
k_m	Moisture conductivity of onion slice, $kg.m^{-1}.s^{-1}$
k_T	Thermal conductivity of vacuum dried onion
kc	Reaction rate constant for colour kinetics
kcal	Kilo Calorie
k_d	Drying rate constant
k_f	Reaction rate constant for flavour kinetics
kg	Kilo Grams
kPa	Kilo Pascal
l, x	Thickness of slice, m
lda	Latent heat of vaporization, $J.kg^{-1}$
m	Meter
M_0	Initial moisture content, kg water.(kg dry solid)$^{-1}$
M_d	Moisture content at any instant in dry basis, kg water.(kg dry solid)$^{-1}$
M_e	Equilibrium moisture content, kg water.(kg dry solid)$^{-1}$
min	Minutes
mm	Millimeter
MR	Moisture ratio
M_v	Mass flux vector, $mol.m^{-2}.s^{-1}$
m_w	Wet basis moisture content, kg water.(kg total matter)$^{-1}$
M_w	Moisture content in percent wet basis
N	Force, $kg.m.s^{-2}$
n	Normal vector of the boundary
N_0	Number of observation taken
M_{v0}	Inward mass flux normal to the boundary, $mol.m^{-2}.s^{-1}$
NAFED	National Agricultural Cooperative Marketing Federation of India
NEB	Non-Enzymatic Browning
NHRDF	National Horticultural Research and Development Foundation
nm	Nanometer
OI	Optical index
PDE	Partial differential equation
PE	Percentage error
pred	Predicted
q	Heat flux vector, $W.m^{-2}$
Q	Heat source (or sink), $W.m^{-3}$
q_0	Inward heat flux vector normal to the boundary, $W.m^{-2}$
R^2	Coefficient of determination
rho, ρ	Bulk density of vacuum dried onion
RMSE	Root mean square error
RR	Rehydration ratio
Rt	Reaction rate, $mol.m^{-3}.s^{-1}$
s	Seconds
SEM	Scanning electron microscopy
∇T	Temperature difference

t	Time, s
T	Temperature at any instant, K
T_0	Initial temperature of onion slice, K
T_a	Chamber air temperature, K
T_b	Bottom temperature of onion slice, K
TC	Thiosulphinate concentration of the solution, μmol.g^{-1}
Theo	Theoretical
T_{inf}	External temperature of domain, K
TL	Thiosulphinate loss
T_r	Transmittance
VDOS	Vacuum drying of onion slices
viz.	Videlicet, namely
w	Weight of sample, g
wb	Wet basis, kg water.(kg total matter) $^{-1}$
Y_e	Experimental values of response
Y_p	Predicted value of the response
z	Number of constants in the model (eqn 3.18)
ε	Molar absorptivity of thiolsulphinate solution at 254 nm, g.μmol^{-1}.cm^{-1}
λ	Characteristics roots of the corresponding regression equation
μ	Micro
χ^2	Reduced chi-square