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NOMENCLATURE

C	specific heat, J. kg ⁻¹ . K ⁻¹
E	electric field, V.m ⁻¹
H	magnetic field, A. m ⁻¹
k	thermal conductivity, W. m ⁻¹ . K ⁻¹
L	length of the regenerator, m
M	magnetization, A. m ⁻¹
m	mass, kg
P	polarization C. m ⁻²
p	pressure, Pa
Q	power density, W. m ⁻³
Q̇	power, W
s	entropy, J. kg ⁻¹ . K ⁻¹
T	temperature, K
t	time, s
u	longitudinal fluid velocity, m. s ⁻¹
V	volume, m ³
v	orthogonal fluid velocity, m. s ⁻¹
Ẇ	mechanical power, W
X	conjugate field
x	longitudinal spatial coordinate, m
Y	applied driving field
y	orthogonal spatial coordinate, m

Greek symbols

Δ	finite difference
ε	elongation, %
θ	period of ACR cycle, s
μ	dynamic viscosity, kg. m ⁻¹ . s ⁻¹
ν	cinematic viscosity, m ² . s ⁻¹
φ	nanofluid concentration
ρ	density, kg. m ⁻³
σ	stress, Pa
τ	period of each step of ACR cycle, s

Subscripts

0	initial
1	final
ad	adiabatic
bf	base fluid
C	cold
H	Hot
ICM	Inverse Carnot Machine
nf	nanofluid
np	nanoparticles
p	constant pressure
s	solid
TOT	total