

LIST OF SYMBOLS

A	Fractional surface area
A_r	Real area of contact
B	True peak broadening
b	Magnitude of Burger's vector
c	composite
D	Average diameter of reinforcement
d	Crystallite size
d_g	Average grain size
F	Force
G	Shear modulus
H	Flow hardness
K	Strength coefficient
K^{-1}	Per kelvin
K_B	Bulk modulus
K_c	Constant
K_H	Hall-Petch coefficient
m	matrix
n	Strain hardening exponent
P	Normal load
Ra	Surface roughness
RT	Room temperature
r	reinforcement
V_f	Volume fraction of reinforced particles
V_{F_M}	Volume fraction of matrix
V_{F_R}	Volume fraction of reinforcement
vol.%	Volume percentage
wt.%	Weight percentage
x_f	Fractional concentration of foreign atoms
α	Coefficient of linear thermal expansion
β	Coefficient of volumetric thermal expansion
θ_B	Bragg angle
$\Delta\sigma_{Orowan}$	Contribution of Orowan strengthening mechanism
$\Delta\sigma_{dislocation}$	Contribution of dislocation strengthening mechanism
$\Delta\sigma_{grain-refinement}$	Contribution of grain refinement strengthening mechanism
$\Delta\sigma_{solid-solution}$	Contribution of solid-solution strengthening mechanism
ε	Lattice strain
ε_d	Fractional difference in zirconium and aluminium atom diameters
ε_p	True strain
λ	Wave length

λ_e	Edge to edge particle spacing
μ	Coefficient of friction
μ_{ad}	Adhesion component of the friction
μ_{asp}	Asperity component of the friction
μ_e	Elastic component of asperity deformation
μ_p	Plastic component of asperity deformation
μ_{part}	Particle or third body component of the friction
μ_{plow}	Ploughing component of the friction
ν	Poisson ratio
ρ	Dislocation density
ρ_M	Density of matrix
ρ_R	Density of reinforcement
ρ_c	Density of composite
$\sigma_{composite}$	Strength of the composite
σ	True stress
τ	Shear strength