

# SYMBOLS USED

## Abbreviations

ASME	American Society of Mechanical Engineers
ASTM	American Society for Testing Materials
OM	Optical microscope
SEM	Scanning electron microscope
TS	Tensile strength
VPN	Vickers Pyramid number
PMM	Partially melted material
$\theta$	Contact Angle
$\Delta S$	Entropy Change
$D_L$	Diffusion Coefficient
$K_B$	Boltzmann's Constant
$C_0$	Bulk Alloy Composition
$\eta$	Heat-transfer efficiency
$G$	Gibbs free energy
$H$	Enthalpy
$C_p$	Heat Capacity
$N$	Nucleation rate
$R$	Critical Nucleus Size
$\gamma_{sL}$	Interface Surface Energy
$X$	Inter lamellar spacing (in mm)
$\sigma_y$	0.2% offset yield strength
$\theta''$	Metastable precipitates
GP	Guinier-Preston zones
$G$	Free energy
$G \times R$	Cooling rate
$S$	Solid dendrites
$L$	Inter dendritic liquid
$\alpha$	Thermal diffusivity
DSA	Dendrite Arm Spacing