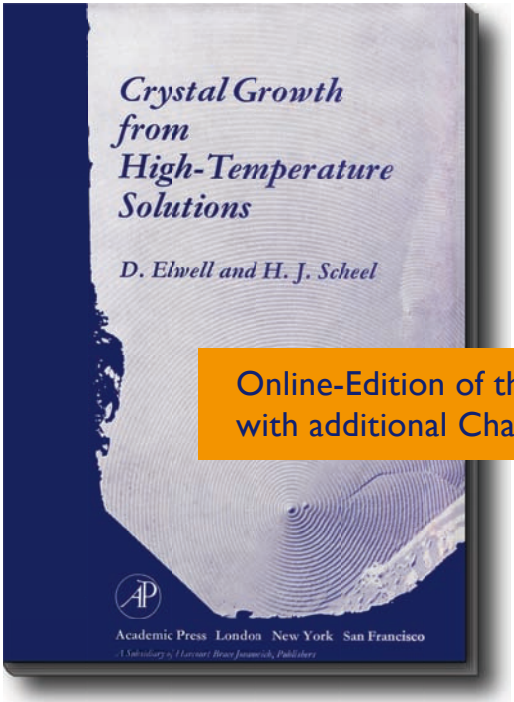


Online-Edition of the original book
with additional Chapter 11 and Appendices A and B

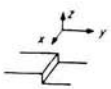
Part 002

Symbols and Abbreviations

(unless otherwise defined)

A_m	surface area occupied per molecule, cm^2
a	cell edge, cm
ACRT	accelerated crucible rotation technique, see Ch. 7, 10
b	ratio of mean displacement on surface to diffusion mean free path (y_s/Λ), see Ch. 4
BCF	Burton–Cabrera–Frank theory, see Ch. 4
C	constant in BCF equation
c	subscript : crystal
CR	chemical reaction, see Ch. 7, 10
CVD	chemical vapour deposition
D	diffusion coefficient, $cm^2\,s^{-1}$
D_s	surface diffusion coefficient, $cm^2\,s^{-1}$
EL	electrolytic growth, see Ch. 7, 10
EV	evaporation technique, see Ch. 7, 10
F faces	flat faces, see Ch. 5
HPS	high-pressure solutions
HTS	high-temperature solutions
I	nucleation rate, s^{-1}
j_s	surface diffusion (solute) flux, $g\,cm^{-2}\,s^{-1}$
j_v	volume diffusion (solute) flux, $g\,cm^{-3}\,s^{-1}$
K	Kelvin
k_{eff}	interface distribution coefficient
k_0	equilibrium distribution coefficient
K faces	kinked faces, Ch. 5
L	latent heat, $J\,mole^{-1}$
LPE	liquid phase epitaxy
N_c	number of molecules in critical nucleus
n	solute concentration, $g\,cm^{-3}$
n_e	equilibrium solute concentration, $g\,cm^{-3}$
n_{sn}	solute concentration in bulk of solution, $g\,cm^{-3}$
PBC	periodic bond chain concept of Hartman and Perdok, see Ch. 5
R	universal gas constant, $J\,K^{-1}$

R	Rayleigh number
r^*	radius of critical nucleus, cm
S_r	surface roughness
s	subscript : surface
SC	slow cooling technique, see Ch. 7, 10
sn	subscript : solution
st	subscript : step
S faces	stepped faces, Ch. 5
T	temperature, K
T_e	equilibrium temperature, K
THM	travelling heater method, see Ch. 7, 10
TPRE	twin-plane re-entrant edge growth mechnaism, see Ch. 5
TR	(temperature gradient) transport technique, see Ch. 7, 10
TSM	travelling solvent technique, see Ch. 7, 10
TSSG	top-seeded solution growth, see Ch. 7, 10
TSZM	travelling-solvent-zone method, see Ch. 7, 10
u	solution flow velocity, cm s^{-1}
V_M	molar volume, cm^3 $mole^{-1}$
v	linear growth rate, cm s^{-1}
v_{st}	step velocity, cm s^{-1}
VLS	vapour-liquid-solid growth, see Ch. 7, 10
VLRS	vapour-liquid-reaction-solid growth, see Ch. 7, 10
W_D	activation energy for volume diffusion, J $mole^{-1}$
W	surface energy per atom, J $atom^{-1}$
W_B	binding energy per molecule, J $molecule^{-1}$
X	seed crystal, see Ch. 10
x_0	mean kink separation, cm
y_0	step separation, cm
y_s	mean displacement on surface, cm
Z^*	collision frequency, s^{-1}



coordinate system with directions x, y, z

( )	one particular crystallographic plane
{ }	general type of crystallographic planes
[ ]	crystallographic direction
⟨ ⟩	general type of crystallographic direction
α	critical angle (twin, grains)
β	step boundary condition parameter, see Ch. 4
Γ	Gibbs–Thompson capillarity constant $= V_M\gamma/RT$
γ	interfacial surface energy, J cm^{-2}
γ'	Temkin parameter

γ_e	edge energy of nucleus, J cm^{-1}
δ	boundary layer for solute diffusion, cm
ϵ	spiral interaction parameter
η	viscosity, poise
κ	thermal conductivity, J cm^{-1} s^{-1} K^{-1}
Λ	adsorption mean free path, cm
ν	kinematic viscosity, η/ρ_{sn}
ρ_c	crystal density, g cm^{-3}
ρ_{sn}	solution density, g cm^{-3}
σ	relative supersaturation
σ_1	constant in BCF equation
σ_s	surface supersaturation
τ_{deads}	deadsorption time, s
ϕ	angle (between twins, grains)
ϕ	heat of crystallization, J mole^{-1}
ϕ_m	heat of crystallization per molecule, J molecule^{-1}
ψ	$\sigma - \sigma_s$
Ω	volume of growth unit, cm^3
ω	angular velocity, rad s^{-1}