

Errata Sheet  
(September 2015)

**Fundamentals of Radiation Materials Science: Metals and Alloys, 1<sup>st</sup> Edition**

Page	Line	Description
<b>Chapter 1</b>		
7	3 from bottom	change " $T = 0$ " to " $\hat{T} = \gamma E_i$ ".
10	Figure 1.5a	variable on ordinate should be " $\sigma_s$ ", variable on abscissa should be " $\phi$ ".
	Figure 1.5b	variable on ordinate should be " $\sigma_s$ ", units of ordinate should be "barns/steradian", variable on abscissa should be " $\phi$ ".
11	Eq. for Q	As written, the equation, the left hand side should be " $-Q$ ".
13	Eq. after (1.26)	power on " $(E_i E_m')$ " term should be " $1/2$ ".
16	Fig. 1.7	Change "T" to " $T_\ell$ ".
18	Eq. (1.45)	Change to $V(r) = k_e \frac{\epsilon^2}{r}$
18	line below Eq. (1.45)	change to "where $k_e = \frac{1}{4\pi\epsilon_0}$ is the Coulomb constant, $\epsilon_0$ is the electric constant, $\epsilon$ is a single unit electronic charge and $\epsilon^2 = 1.44$ eV-nm".
19	Eq. (1.46)	second inequality should be " $r \leq r_0$ ".
19	5 lines from bottom of page	change "van de Waals" to "van der Waals".
21	first line	remove "a" before "little".
21	Eq. after (1.52)	limit should be " $r \rightarrow 0$ ".
24	lines 9 and 10 after Eq. (1.60)	change " $\phi$ " to " $V$ ".
	7 <sup>th</sup> from bottom	insert space before " $M_2$ ".
25	Table 1.3	
	Screened Coulomb	change to "Light ions $r < a_0$ ".
	Inverse square	change " $E_r$ " to " $E_R$ ".
26	Eq. (1.61)	change " $M'$ " to " $M_I$ ".
27	Eq. above Eq. (1.64)	" $v_\ell$ " on LHS of first Eq. should be " $v_1$ ".
28	line above Eq. (1.69)	insert ", $\rho_s$ :" after "approach".
28	Eq. (1.69)	replace " $r$ " with " $\rho$ " in in two places in Eq. (1.69).
32	expression below (1.82)	After first equality in line, insert "(using the absolute value of the derivative to maintain $\frac{db}{d\phi}$ as a positive value)".
34	Eq. (1.92)	move " $1/2$ " to inside of square bracket.
35	Eq. (1.96)	change argument of first " $\sin^{-1}$ " term to " $\frac{b_0}{2b^2c}$ ".
36	Eq. (1.102)	change " $E_i \gamma$ " to " $\gamma E_i$ ".
37	Eq. (1.108) & (1.109)	change " $\epsilon^2$ " to " $e^2$ " in all three instances of use.
39	line 4	replace "for the" with "for the same value of $E_i$ and for".

40	5 <sup>th</sup> line from bottom	change “MeV” to “MV”.
45	pph 3, last line	change “ $dE/dx=NS(E)$ ” to “ $-dE/dx=NS(E)$ ”.
45	2 lines above Eq. (1.129)	replace “ $\frac{1}{N}\sigma$ ” with “ $\frac{1}{N\sigma}$ ”.
48	Fig. 1.17	Caption should read: Reduced differential cross section calculated from the Thomas–Fermi potential. Abcissa is $\epsilon = t^{1/2} / \sin \phi / 2$ . The thick solid line ranging over $10^{-3} < \epsilon < 10$ is from Eq. (1.141). The thin solid lines at left and right and the horizontal line in the middle are calculated using the power law cross section, Eq. (1.144) (from [15]).
49	Eq. (1.145)	change “ $\sigma(E,T)$ ” to “ $\sigma(E_i,T)$ ”.
50	Eq. (1.146)	change “ $\sigma(E,T)$ ” to “ $\sigma(E_i,T)$ ”.
50	Fig. 1.18	Change to $S_n^0 \sim 0.327$
51	Fig. 1.19	Change Eq. ref. in caption to Eq. (1.167).
51	Fig. 1.20	Change Eq. ref. in caption to Eq. (1.168).
52	line 2	indent paragraph beginning with “Two approximations....”.
53	second line above Eq. (1.160)	change to “using a Thomas-Fermi screening function, and expanding...”
53	line below Eq. (1.160)	change to “where $f(r/a) = a/r$ .”
55	line below Eq. (1.169)	change “cross section” to “power”.
55	Eq. (1.170)	replace “ $S_e(E)$ ” with “ $\left(\frac{dE}{dx}\right)_e$ ”.
57	Third line from end of section 1.3.1	“ $k'_{si}$ ” should have units of “ $eV^{1/2} cm^2$ ”.
	Second line from end of section 1.3.1	change “stopping powers” to “energy loss rates”
57	Eq. (1.182)	last equality should be “ $-kE^{1/2}$ ”.
58	Table 1.7	change “stopping powers” to “energy loss rates” in title and sub-headings.
	Low E general Expression Thomas-Fermi Screening Expression for K In T-F screening	insert “ $N$ ” in numerator
		insert “ $N$ ” in numerator
		change units to “ $eV cm^2$ ”.
58	Eq. (1.184)	replace “ $S_T(E)$ ” with “ $\left(\frac{dE}{dx}\right)_T$ ”.
64	Example 1.3 lines 5 and 7	change equation references to “Eq. (1.206)” and “Eq (1.207)”.
66	Nomenclature	$k_e$ Coulomb constant
67	Nomenclature	$\epsilon$ unit electronic charge
		$\epsilon_0$ electric constant
70	Problem 1.15 b)	change to “ $S_e(E) = k' E^{1/2}$ ” and “ $k' = 2 \times 10^{-16} eV^{1/2} cm^2$ .”

## Chapter 2

75	point #2	change to “Eq. (2.3).”
76	line below Eq. (2.8)	change “ $d\epsilon/dT$ ” to “ $d\epsilon/T$ ”.
76	see change of variables issue in David’s note – no changes needed.	

77	Fig. 2.3	redraw curve
78	first line	insert “if $E_c$ is ignored,” after “Note that”.
78	2 <sup>nd</sup> and 4 <sup>th</sup> line from bottom of second to last paragraph	change “ $E_c$ ” to “ $E_s$ ”.
91	First line below Eq. (2.55)	Bohr radius should be “ $a_0$ ” not “ $a0$ ”.
91	5 <sup>th</sup> line from bottom	insert “direction” after “crystallographic”.
93	check on Eq. (2.65)	Its correct – just work through law of sines...
94	line 7	critical focusing energy should be written “ $E_{fc}^{hkl}$ ”.
94	line below Eq. (2.71)	inequality should read “ $E \geq E_{fc}$ ”.
95	line above Eq. (2.77)	change to “Eq. (2.76)”.
95	line above Eq. (2.79)	change to “ $E_{fc}/2A \ll 1$ ”.
96	line 8 under section heading “ <b>Replacement Collisions</b> ”	change “Atoms is...” to “Atoms in...”
100	Table 2.3a title	“Equations for $E_{fc}^{hkl}$ in the fcc and bcc lattices considering assisted focusing (after [18])”
100	Table 2.3a first entry in “Face-centered cubic” column	
		$\frac{A(D^{110})^2}{2B^2} \exp\left(-\frac{D^{110}}{4B}\right)^\uparrow$
100	Table 2.3a third entry in “Face-centered cubic” column	
		$\left(\frac{6}{19}\right)^{1/2} \frac{A(D^{110})^2}{B^2} \exp\left(-\frac{D^{110}}{2B} \left(\frac{19}{12}\right)^{1/2}\right)^\uparrow$
101	Eq. (2.92)	equation should read “ $V_{ch}(r) = kr^2$ ”.
104	Eq. (2.102)	equation should read $T \frac{dv}{dT} = \dots$
105	first line below Fig.2.17	change “into Eq. (2.82)” to “into Eq. (2.102)”.
107	Eq. (2.115)	insert “ $\sigma_\gamma$ ” after second equality.
109	Eq. at bottom	limits of integration should be: “ $E$ ” for lower limit and “ $\hat{E}$ ” for upper limit.
110	Eq. (2.122)	first and third terms in square brackets should be “ $2E_d^2$ ”.
111	line below Eq. (2.123)	change to “Eq. (2.1)”.
117	3 lines above Eq. (2.134)	change “ions/cm <sup>2</sup> ” to “ions/cm <sup>2</sup> -s”.
118	Last equality in Eq. (2.138)	unit should be $\frac{\text{displacements}}{\text{n/cm}^2}$ .
120	16 <sup>th</sup> line from bottom	“ $\epsilon$ ” should be “ $\epsilon_r$ ”.
121	problem 2.3 line 3	units on flux are “n/cm <sup>2</sup> s”.
122	problem 2.12 line 4	change to “ $k' = \dots$ ”
122	problem 2.13	in the equation, replace “ $v(T)$ – “ with “ $v(T) = “$ .
123	problem 2.14 line 3	“Kinchin” is misspelled.
123	problem 2.17	remove the last two lines of the problem, starting with “Use...”.

### Chapter 3

126	line 4 below Eq. (3.5)	change content in parentheses to " $(\lambda \sim 0.2 \text{ nm})$ "
129	last line and p 130 first line to the period.	change to "of greatest importance, rather it is the number of recoils weighted by the damage energy produced in each recoil that is most important."
130	Eq. (3.13)	Lower integration limit should be " $E_d$ ".
130	Last line before Section 3.3	Remove "a" after "of" and before "creating"
132	Figure 3.7	change " $\epsilon$ " to " $\xi$ " in four places in figure.
132	first line below Eq. (3.20)	"Boltzmann's" is misspelled.
133	2 <sup>nd</sup> line	change "cascade" to "damage".
133	Eq. (3.23)	term in brackets is raised to the 2/3 power.
134	line 12 from top of page	change "MARLOW" to "MARLOWE"
144	Eq. (3.24)	$\zeta$ should be " $\zeta_i$ " and " $\zeta_v$ ", respectively.
149	line 10 from top of page	" $v_{\text{NRT}}$ " should be " $v_{\text{NRT}}$ "
150	line 1 from top of page	change "Fe-Cu" to "Fe-Cr".
152	Nomenclature	Add " $R^2$ " variance in temperature profile, Eq. (3.21)
		Remove " $\Theta$ " cascade energy density".

### Chapter 4

156	Figure 4.2 caption	label left drawing "a" and right drawing "b".
156	Figure 4.4 caption	label left drawing "a" and right drawing "b".
156	Figure 4.6 caption	label left drawing "a" and right drawing "b".
160	Table 4.1	remove asterisk in definition of equilibrium vacancy concentration.
		Add as footnote to table "*estimated by assuming $S_f=8k$ ".
164	first line	change "at finite a temperature" to "at a finite temperature".
164	Eq. (4.7)	insert " $k$ " in front of the term in brackets.j
165	Eq. (4.14)	denominator in last term on the right should be " $kT$ ".
166	Example 4.1 a)	change equation references to "Eqs. (4.15) and (4.16)".
167	Eq. (4.20)	replace $\gamma$ with $\sigma$ in second term.
167	Eq (4.20)	remove "2" outside the brackets in the second line of the Eq.
170	line 7	change to "species".
171	pph 2, line 1	change to "mechanisms".
173	Eq. (4.30)	remove period in front of " $\lambda_3$ ".
175	Eq. (4.46)	change 1/6 to $\frac{1}{6}$ .
175	line above Eq. (4.47)	change 1/6 to $\frac{1}{6}$ .
175	two lines above Eq. (4.49)	remove " ," after "cases".
176	last line	change " $N_m$ " to " $n_m$ ".
177	eqn for $N_v$ in section 2	insert negative sign into last term: " $\exp\left(\frac{-E_f^v}{kT}\right)$ ".
177	Eq. before Eq. (4.55)	Replace " $N_V$ " with " $N_v$ ".
177	Eq. (4.55)	in first term after equality, change " $S_v^m$ " to " $S_m^v$ ".
178	Eq. (4.57)	remove "+" sign in second term.
178	Eq. (4.61)	remove "and".

179	first line in example box	change “3 nm” to “0.3 nm”.
179	Table 4.2 second from last line, column D	change entry to “ $1/6a^2\omega$ ”.
183	Eq. (4.69)	Replace with “ $\tilde{D} = D_A N_B + D_B N_A$ ”.
188	Nomenclature	Add “ $\kappa_T$ thermal conductivity”.
189	problem 4.7	line 1: Change “diffusivity of” to “diffusion coefficients for”. line 4: Change “diffusivity of” to “diffusion coefficients for”. last line: remove “Take $\gamma=1$ ”.

## Chapter 5

202	third line above Eq. (5.37)	change “ $\alpha$ ” to “ $\infty$ ” in two places.
203	11 lines from bottom of page	change “The thin solid lines are the interstitial and vacancy concentrations and the thick solid line is their sum as calculated from Eq. (5.35)” to “The thin solid lines are the interstitial and vacancy components and the thick solid line is their sum as calculated from Eq. (5.39)”
204	Fig.5.6 caption	“heavy lines” – need to redraw curve.
205	label for line 2 in Fig. 5.7	the value of $\rho_d$ should be “ $10^{14}$ ”.
205	Eq. (5.42)	in denominator, change “ $K_{iv}$ ” to “ $K_{is}$ ”.
206	first line above Eq. (5.46)	last term is $K'_{vs} = 4\pi r_{vs}$ .
209	Eq. (5.52)	remove subscript from “ $\omega$ ”.
214	line above Eq. (5.76)	change to “Using Eq. (5.74) gives:”
215	line below Eq. (5.79)	replace “Eq. (5.56)” with “Eq. (5.77)”.
215	Eq. (5.83)	Change term after the equality to “0”.
215	Eq. (5.83)	value on RHS should be changed from “1” to “0”.
218	first line below Eq. (5.101)	change “divided” to “multiplied”.
218	line above Eq. (5.102)	remove “a/cm <sup>2</sup> ”.
218	Eq. (5.102)	replace “ $z_d/D$ ” with “ $z_d$ ”.
220	Eq. (5.115)	Insert “ $D_v$ ” to LHS of Eq. and “ $D_i$ ” to RHS of Eq.
221	Table 5.2	Rate constants for “v,i + grain boundary, Diffusional control” should be: $K_{vgb} = 4\pi D_v d \quad K_{igb} = 4\pi D_i d$ $K_{vgb} = \pi k D_v d^2 \quad K_{igb} = \pi k D_i d^2$
	$K_{vgb} = 4\pi D_v d \quad K_{igb} = 4\pi D_i d$ $K_{vgb} = \pi k D_v d^2 \quad K_{igb} = \pi k D_i d^2$	Need to add this to revised text – hard to do in table.
225	problem 5.9	in definition for “ $z_d$ ”, change “divided” to “multiplied”. add “ $\rho_d = 10^{10} \text{ cm}^{-2}$ ” below the definition of “ $r_{id}$ ”.
226	Problem 5.14a	should read “interstitial annihilation”

## Chapter 6

235	Eq. (6.7)	Change “ $N_v$ ” to “ $N_A$ ”.
235	3 lines from bottom of page	add period after “Eq. 6.6”.
238	line 6 in Example 6.1	Change “ $E_m^{Bv}$ ” to “ $E_m^{Bi}$ ”.
240	line 2 above Eq. in Example 6.2	Change “ $E_m^{Ai} = 0.9 \text{ eV}$ ” to “ $E_m^{Ai} = 0.09 \text{ eV}$ ”.

240	Eq. in Example 6.2	The middle term in the exponent should be “ $E_m^{Ai}$ ”.
246	line after Eq. (6.29)	Change “Eq. (6.25) to Eq. (6.28)”.
248	Eq. (6.39)	In Eq. for JC, change the second term to the right of the equality to “ $d_{C_v} \Omega C_C \Delta C_v$ ”.
251	2 lines above Eq. (6.44)	change “exchnge” to “exchange”.
252	Eq. (6.47c)	change third term in square brackets to “ $\frac{C_{Fe}}{2} E_{NiNi}$ ”.
		change last term in square brackets to “ $C_v E_{Ni-v}$ ”.
254	Fig. 12 caption	Reference should b “(after [12])”.
255	Eq. (6.57)	change “ $K_v$ ” in last term to “ $K_{vs}$ ”.
255	Eq. (6.58)	change “ $K_i$ ” in last term to “ $K_{is}$ ”.
260	lines 3 and 4	Change “...determining in the...” to “...in determining the...”.

## Chapter 7

269	Figure 7.4	change “pure screw character at point A” to “pure edge character at point A” and “pure edge character at point B” to “pure screw character at point B”.
270	Eq. (7.2)	Should use proportional symbol “ $\propto$ ”.
271	Eq. (7.4)	Should use proportional symbol “ $\propto$ ”.
273	line eleven from top	Change “plan” to “plane”.
276	Figure 7.17	Directions are all backward. Fix figure.
278	Figure 7.20	Arrow below “ $\theta$ ” in figure should go in opposite direction.
279	Eq. (7.15)	Last equality for $\sigma_{xx}$ , $\sigma_{yy}$ , and $\sigma_{xy}$ should have a “2” in the denominator.
		First equality for $\sigma_{xx}$ should have a “-“ sign, and the last equality should not have a “2”.
283	Eq. (7.29)	insert “2” before the term on the LHS of the Eq.
283	line 8 below Eq. (7.32b)	Change “Eq. (7.32b)” to “Eq. (7.32a)”.
283	4 lines above sec. 7.1.6	change “Frank-Reed” to “Frank-Read”.
289	Eq. 7.47 and below	change $\sigma_{xz}$ and $\sigma_{yz}$ to $\sigma_{zx}$ and $\sigma_{zy}$ .
294	section 7.19, 6 <sup>th</sup> line from bottom	change “job” to “jog”.
296	second pph, line 5	change “line” to “lie”.
304	5 <sup>th</sup> line from bottom	remove “in” after “into”.
308	line above Eq. (7.60)	add “, $n_v$ ” after “number of vacancies”.
308-309		change “ $n$ ” to “ $n_v$ ” in: line below Eq. (7.61)
308	Eq. (7.60)	change “ $E_S$ ” to “ $E_V$ ”.
311	line # 7 from the bottom	replace “... there is considerable <i>uncertainly</i> regarding ...” by “... there is considerable <i>uncertainty</i> regarding ...”
328	Fig. 7.59a	change “3600” to “600” in abscissa label.
329	line below Eq. (7.137)	change “ $\rho_n$ ” to “ $\rho_N$ ”.
338	problem 7.8, lines 2 and 3	change “the x-axis to be in the plane of the loop” to “the z-axis to be in the plane of the loop”.

## Chapter 8

345	line 5 after Eq. (8.3)	Replace “removing” with “placing” and replace “from” with “in”.
346	line above Eq. (8.10)	remove “and”.
347	line below Eq. (8.16)	move “ $\Delta G_n^0$ ” up to the preceding line just after “for”.
347	Fig. 8.2	label on bottom curve should be “ $\infty -n$ ”.
349	third line below Eq. (8.21)	change “ $\beta_v(n+1)$ ” to “ $\beta_i(n+1)$ ” and add “vacancy” before “loss”.
350	Fig. 8.4 caption	Remove “of” in line 2.
350	Eq. (8.25)	“ $\beta_i(n)$ ” in denominator of second term in middle equality should be “ $\beta_i(n)$ ”.
350	line below Eq. (8.26)	change “ $\beta_i(n)$ ” to “ $\beta_i(n)$ ”. Should be $\beta_v(n)$ ?
352	first line below Eq. (8.36)	change “were” to “where”.
352	first line below Eq. (8.34)	change “Fig. 8.2” to “Fig. 8.3”.
353	Eq. (8.40)	replace “36” with “32”.
356	line 5	change “as” to “an” to read “...just an extension...”
361	Fig. 8.11	replace “ $\beta_i \beta_v$ ” in figure with “ $\beta_i/\beta_v$ ”.
361	Eq. (8.61)	indentation should be same as for Eq. (8.62)
367	line below Eq. (8.79)	change “Table 5.1” to “Table 5.2”.
367	Eq. for $C_0$ , above Eq. (8.80)	insert minus sign in exponent for “ $H_f$ ”.
368	Eq. (8.87)	change all “ $d$ ” sub- and super-scripts to “ $N$ ”
368	line below Eq. *8.87)	change “Table 5.1” to “Table 5.2”.
368	Eq. (8.88)	change all “ $d$ ” sub- and super-scripts to “ $N$ ”.
369	line 2 below Eq. (8.91)	replace “Eqs. (8.91) and (8.92)” with “Eqs. (8.90) and (8.91)”.
371	Eq. (8.108) line 3 of Eq.	in last term , change “ $D_v C_v$ ” to “ $D_i C_i$ ”.
373	Eq. (8.115)	Correct Eqs. are: $C_v = \frac{-K_{is} C_s}{2K_{iv}} + \left[ \frac{K_0 K_{is}}{K_{iv} K_{vs}} + \frac{K_{is}^2 C_s^2}{4K_{iv}} \right]^{1/2}$ $C_i = \frac{-K_{vs} C_s}{2K_{iv}} + \left[ \frac{K_0 K_{vs}}{K_{iv} K_{is}} + \frac{K_{vs}^2 C_s^2}{4K_{iv}} \right]^{1/2}$ ,
373	line below Eq. (8.115)	change “Table 5.1” to “Table 5.2”.
373	Eq. (8.116)	Correct Eqs. are: $C_v = \frac{-k_i^2 D_i}{2K_{iv}} + \left[ \frac{K_0 k_i^2 D_i}{K_{iv} k_v^2 D_v} + \frac{(k_i^2)^2 D_i^2}{4K_{iv}} \right]^{1/2}$ $C_i = \frac{-k_v^2 D_v}{2K_{iv}} + \left[ \frac{K_0 k_v^2 D_v}{K_{iv} k_i^2 D_i} + \frac{(k_v^2)^2 D_v^2}{4K_{iv}} \right]^{1/2}$ .
374	Eq. (8.126)	change “D” to “d”.
374	line below Eq. (8.126)	change “Eq. (5.57)” to “Eq. (5.58)”.
374	Eq. (8.127)	in denominator, change “ $D_i$ ” to “ $a^2$ ”.
		in denominator, change “ $\rho_D$ ” to “ $\rho_d$ ”.
375	Eq. (8.130)	in denominator in first term after equality, change “ $p_d$ ” to “ $\rho_d$ ”.
376	line above Eq (8.134)	insert “all but the first” after “in”.
376	Eq. (8.135)	change “ $A$ ” to “ $\emptyset$ ” in very last term.
377	line 13 in sec. 8.3.1	change “ $F'(\eta)$ to $F(\eta)$ ”.
381	4 <sup>th</sup> line from bottom	change RHS of inequality from “ $\frac{z_v}{z_i}$ ” to “ $\frac{z_i}{z_v}$ ”.
382	Eq. (8.148)	Change “ $\rho_v$ ” to “ $\rho_V$ ”.
384	pph 2, line 3	change “ $Q < 1$ ” to “ $Q > 1$ ”.
384	pph 2, line 10	change “ $Q > 1$ ” to “ $Q < 1$ ”.
384	Fig. 8.21	label on ordinate should be “ $Q/(1+Q)^2$ ”. Value should be “0.25”.

385	Fig. 8.22	units on label on ordinate should be “(%/dpa)”.
393	line 2	change “terms” to “term”.
394	line below Eq. (8.169)	replace “Eq. (8.165)” with “Eq. (8.168)”.
395	Fig 8.32 caption.	Value for $\rho_d$ should be same as in graph
396	Eq. (8.176)	after equality sign, change “ $\sigma_n$ ” to “ $\sigma_h$ ”.
412	Fig. 8.48b	see revision to legend.
417	line 2 above Eq. (8.204)	change “substituting in from Eq. (8.194) for p gives” to “substituting for p from Eq. (8.194) to give”.
418	2 lines below Eq. (8.206)	change “Eqs. (8.201) and (8.205)” to “Eqs. (8.195) and (8.205)”.
419	line 2 after Eq. (8.211)	add a space after “ $C_v$ ”.
423	header at top of page	change to read “8.5 Bubble Growth”.
423	line 2 below Eq. (8.228)	change to “the thermal neutron cross-section for the reactions in Eq. (8.228) are 4.6b and 12.3b, respectively.”
426	Nomenclature	Add “ $z_{iv}$ combinatorial factor for vacancy-interstitial recombination”.
		Add “ $\Sigma_s$ macroscopic neutron scattering cross section”
		Add “ $\gamma_{SFE}$ stacking fault energy”
427	problem 8.4	change “ $\dot{R}/R_0$ ” to “ $\dot{R}/\dot{R}_0$ ”.
		change “ $\nu=100$ displacements/neutron” to “# displacements/neutron = 100”.
		change “ $Z_i$ ” and “ $Z_v$ ” to “ $z_i$ ” and “ $z_v$ ”.
		in Eq. for “ $D_v$ ”, change “ $a_0^2$ ” to “ $a^2$ ”.
		Eq. for “ $C_v$ ” should read “ $C_v^0$ ”.
428	problem 8.5	change “ $C_r$ ” to “ $C_v$ ”.
429	problem 8.7	change “ $\sigma/\gamma _{Ni} < \sigma/\gamma _{Fe}$ ” to “ $\gamma/\gamma_{SFE} _{Ni} < \gamma/\gamma_{SFE} _{Fe}$ ”.
	problem 8.12	change “=2” to “= $\sqrt{2}$ ”.

## Chapter 9

438	Eq. (9.9)	remove parenthesis “)” to the right of the $r_p^3$ term in denominator of the first term after the equality sign.
438	Eq. (9.10)	change “ $C_e$ ” to “ $C_e$ ”. – No error here.
440	after Eq. (9.16)	insert “where “ $C_0$ is the initial solute concentration” before “and the maximum...”
440	Eq. (9.17)	the term “ $(L-r_p^2)$ ” in the denominator should be “ $(L-r_p)$ ”.
442	Eq. (9.25)	Change “ $D_v$ ” to “ $D_i$ ” and “ $r_v$ ” to “ $r_{iv}$ ”.
443	Eq. (9.27)	Change “ $D_v$ ” to “ $D_i$ ” and “ $r_v$ ” to “ $r_{iv}$ ”.
443	two lines below Eq. (9.27)	after “= $K_0/N$ ” add, “, where N is the atom number density, and”.
443	Fig. 9.8	Axis labeled “ln G” should be “ln $K_0$ ”.
443	line above Eq. (9.28)	Change “between Eqs. (9.21 and (9.26))” to “between Eqs. (9.23 and (9.26))”.
443	Eq. (9.29)	Change “ $D_v$ ” to “ $D_i$ ” and “ $r_v$ ” to “ $r_{iv}$ ”.
444	Eq. (9.31)	Change “ $D_v$ ” to “ $D_i$ ” and “ $r_v$ ” to “ $r_{iv}$ ”.
445	line 4 in section 9.3	change “thickness, $l$ ” to “thickness, $l$ ”.
445	line 5 in section 9.3	change “fraction, $f$ ” to “fraction, $f$ ”.
445	Eq. (9.33)	change “ $dr/dt$ ” to “ $dr_p/dt$ ”.
446	first line	change “by” to “be”.
446	line below Eq. (9.37)	add “,” after “ $K_w$ ”.



448	Fig. 9.11b caption	change “a phase” to “ $\alpha$ phase”.
450	second line below Fig. 9.13	Change “the $\gamma'$ phase ( $L1_2$ ), $NiAl_3$ ,” to “the $NiAl_3$ phase ( $D0_{11}$ )”.
452	two lines before Eq. (9.51)	remove “into” that appears after “Substituting...”.
452	Eq. (9.5)	second term on RHS of equality – raise x to 2/3 power
453	Eq. (9.59)	replace Eq. (9.59) with $\Delta\phi = -kT \ln[S_x[S_v(1 - \beta_i / \beta_v)]^\delta] - \frac{kT}{4B} [\ln(S_v(1 - \beta_i / \beta_v))]^2$
453	line 1 after Eq. (9.59)	first word should be flush to LH margin.
453	line before Fig. 9.15	Change “increase” to “decrease” and “emission” to “capture and “<” to “>”.
454	line 4	remove “with”.
454	pph 2, line 5	change “tout” to “out”.
456	Fig. 9.17 caption	in part (a), change “23°C” to “27°C”. In part (b), change “123°C” to “127°C”.
465	line 7	add “,” after “Fig. 9.21a”.
471	3 <sup>rd</sup> line from bottom of page	Change “ $\langle \delta_{vib}^2 \rangle$ ” to “ $\langle \delta_{stat}^2 \rangle$ ”.
	Fig. 9.23 b	Change “ $\alpha$ ” to “ $\gamma$ ” in two places in figure.
472	Eq. (9.74)	Change “ $\theta_0^2$ ” to “ $\theta_d^2$ ”.
473	Eq. (9.78)	Change “ $kT$ ” in second term to the right of the equality to “ $kT_c$ ”.
475	last bullet	Change “dose-dependent” to “temperature-dependent”.
476	line 1	replace “9.75” with “9.76”.
478	line above Eq. (9.81)	change “ $\Delta G_{ac}$ ” to “ $\Delta G_{ca}$ ”.
478	Eq. (9.81)	change “ $\Delta G_{ac}$ ” to “ $\Delta G_{ca}$ ”.
479	Fig. 9.32	third word of label on the ordinate should be “material”.
487	problem 9.3	Include “ $E = 200$ MPa and $\nu = 0.3$ ”

## Chapter 10

514	line below Eq. (10.57)	change “Eq. (10.56)” to “Eq. (10.57)”.
515	line 1	remove “of”.
521	Fig. 10.18	Change label #7 to “PS+RED+RIS+GA+DM”.
528	line 8 above sec. 10.3.3	change “ $\rangle 110 \langle$ ” to “ $\langle 110 \rangle$ ”.
528	line 7 from bottom of page	replace “68” with “110”.

## Chapter 11

549	7 lines from the top of page	Remove “a” after “of” and before “creating”
549	Eq. (11.4b)	Denominator should be “ $T^2$ ” (T hat).
549	line 1 after Eq. (11.4b)	no indentation of paragraph.
551	Table 11.1	First damage rate for neutrons should read $1 \times 10^{-8}$
554	line after Eq. (11.6)	eliminate one “ratio of”.
569	line 2 from bottom of page	remove “:” after “irradiations”.
570	Fig. 11.20 caption	should read “Comparison of hardening in commercial purity 304 (a) and 316 (b) stainless steel irradiated with neutrons or protons to similar doses (from [21])

## Chapter 12

583	table at top	expression for " $\epsilon_{zz}$ " at stress " $\sigma_{yy}$ " should be " $\epsilon_{zz} = \frac{-\nu\sigma_{yy}}{E}$ ".
583	Eq. (12.3)	in expression for " $\epsilon_{zz}$ ", last stress term should be " $\sigma_{yy}$ ".
584	line after Eq. (12.13)	insert "," after " $\mu$ ".
591	Eq. (12.45)	replace s by S .
593	Eq. (12.61)	after Eq., insert "and b is a factor dependent on orientation with a value approximately equal to unity".
594	second line below Eq. (12.62)	change equation and text to " $\sigma = M\sigma_s$ where M is the Taylor defined as the ratio of the axial stress to the resolved shear stress".
594	Eq. (12.63)	change " $m$ " to " $M$ ".
596	Eq. (12.65), line after Eq. (12.66)	Change " $b_{seg}$ " to " $b_e$ ".
596	Eq. (12.68)	Change "0.09" to "0.18
598	line below Eq. (12.72)	Eq. reference should be to "Eq. (5.82)".
598	Eq. (12.75)	Change to " $\sigma_y = \sigma_i + \alpha M \mu b r_d^{1/2}$ ".
599	line after Eq. (12.77)	Eq. reference should be to "Eq. (12.76)".
601	line #7 from the bottom: "... 10 K and a under ...".	Remove "a".
604	second line in section on "Loops"	change section reference to "Sect. 12.2".
610	Eq. (12.102)	all stress terms should have a " $\Delta$ " in front of them.
610	line below Eq. (12.103)	change "root sum square" to "root-sum-square". $\rho_0 \ll A\epsilon$ .
613	line 10 below Eq. (12.107)	change "dose" to "dose".
614	7 <sup>th</sup> line below Eq. (12.108)	replace $(\phi t^{1/2})$ by $(\phi t)^{1/2}$
615:	after equation (12.110)	replace reference to Eq. (12.106) by (12.110)
615	line #4 from the bottom	remove "due"
616	Eq. (12.112)	replace $\phi$ by $\phi t$ or by $\Phi$
615	last line	add "dpa-1" after "B~0.5".
618	Figure 12.16	Both, Y-axis and X-axis labels are exactly the same although one is referring to calculations and the other to measurements according to the caption. The labels should be modified.
620	third line from bottom of page	change "prodced" to "produced".
621	Figure 12.19	in both (a) and (b), replace the X-axis label $\Phi t$ by $\phi t$
624	Eq. (12.127)	$(\Delta\sigma_y=3.03H_v)$ should be the same expression than the expression in Fig. 12.22(a) $(\Delta\sigma_y=3.03\Delta H_v)$
625	Eq. (12.128)	$(\Delta\sigma_y=3.06H_v)$ should be the same expression than the \ expression in Fig. 12.22(b) $(\Delta\sigma_y=3.06\Delta H_v)$
626	Eq. (12.129)	second equation should read $\Delta\sigma_y = 2.13\Delta H_v + 155, \Delta H_v > 100$ kg/mm <sup>2</sup>
629	caption in Fig. 12.25	include "(d)" before Tanigawa.
632		replace Fe18Cr-12Ni by Fe-18Cr-12Ni
638	problem 12.2, first line	change to "the radius of a constant density of voids".
639	problem 12.4, last line	change reference to "Problem 12.3".
639	7 <sup>th</sup> text line of problem 12.5	"... friction stress $\sigma_i$ ) ..." should be $\forall$ friction stress $\sigma_i$ ) ..."
639	problem 12.5	in Eq. for $\sigma_i$ , 5 <sup>th</sup> line from the bottom of the page, change "v" to " $\forall$ ".

## Chapter 13

644	Eq. (13.1)	denominator in argument for “sin” term should be “ $\lambda$ ”.
646	Eq. (13.11a)	remove subscript on “ $\gamma$ ”.
646	Eq. (13.11b)	remove subscript on “ $\gamma$ ” and change “4” to “2” in numerator.
648	Figure 13.2a	distance from sample face to tip of crack should be defined as “ $c$ ”.
648	line above Eq. (13.18)	after “ <i>crack extension force</i> ”, insert “(actually a force per unit length)”.
649	line before equation (13.20)	remove “.”
651	third line below Eq. (13.25)	change “trip” to “tip”.
659	line #3	“... proposed <b>that</b> the idea that ...”, remove the first “that”
659	line #9:	“... deformation, <b>and</b> then the ...”, remove “and”
659	after equation (13.48)	“If we let <b>and</b> ...”, remove “and”
659	line after Eq. (13.48)	should read “and $r \approx a$ ”.
660	second line below Fig. 13.10	change “Eq. (13.51)” to “Eq. (13.50)”.
664	Sec. 13.7 line 2 of first pph.	Change “ductility” to “ductile”.
666	4 <sup>th</sup> line from bottom	change “flow stress” to “yield stress”.
667	Eq. (13.59)	Move “0.02” outside of the square root sign.
674	Fig. 13.23	Change label on second curve from bottom from “0.44” to “0.044”.
682	line #13 from the bottom	“... at 45 °C ...”, looks like it should be units of angle instead of temperature, remove “C”
689	caption of Fig. 13.36	“... ofductile ...”, introduce space in between “of” and “ductile”
696	first line after Eq. (13.90)	change to “where $f = R^2/b^2$ is the area fraction of cavities assuming a 1-dimensional representation of voids on the boundary. For a square lattice geometry, the fractional area occupied by the...”
700	line #16	“... becomes and key ...” should be (?) “... becomes a key ...”
706	problem 13.4b	change “ $7 \times 10^6$ ” to “700”.
707	problem 13.7, line 3	change to “ $\gamma = 5 \text{ J/m}^2$ ”.
708	reference 28	change to “Stoller RE (2004) J ASTM Int 1(4) Paper ID JAI11355.”

## Chapter 14

711	line #5 after Eq. (14.2)	“ <b>An elastic</b> strain ...” should read “ <b>Anelastic</b> strain ...”
711	line #8 from the bottom	“Due the ...” should read “Due <b>to</b> the”
721	fix Eq (14..38)	remove the second “ $\dot{\epsilon}$ ”
723	first line after Eq. (14.44)	the expression “Note that the stress <b>dependence</b> ...” is not correct and should be reworded as “Note that the stress <b>power/exponent</b> in this model is ...”
725	first line after Eq. (14.51)	rewrite “ $\sigma\Omega kT$ ” as “ $\sigma\Omega/kT$ ”
725	second line Eq. (14.52)	rewrite “... square of the grain size.” as “... square of the grain diameter.”
733	first line after Eq. (14.92)	rewrite “... $\Delta z_i^d$ is ...” as “... $\Delta z_i^d$ is ...” (insert space)
734	line #3	rewrite “... and $\Delta z_i^{dj}$ ...” as “... and $\Delta z_i^{dj}$ ...” (insert space)

734	line #3	rewrite "... = $z_i^d$ ." as "... = $z_i^d$ ." (remove space between \
734	line #5	rewrite "... and <b>as</b> given ..." as "... and <b>is</b> given ..."
761	problem 14.4	the quantity $Q_i^v$ is define twice: once as 0.66 eV and then 0.12 eV. But one should be replaced by $Q_i^i$ and the other by $Q_m^i$ .
761	problem 14.4, line 2	change "where $J_i^d$ is the flux of interstitials to", to "where $J_k^d$ is the flux of defect $k$ to"

**Index**

816	coherent precipitates	change "371" to "370".
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