Errata to: Coabsorbent and Thermal Recovery Compression Heat Pumping Technologies

Mihail-Dan Staicovici

Errata to:
M.-D. Staicovici, *Coabsorbent and Thermal Recovery Compression Heat Pumping Technologies*,
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Corrections to be made to the book "Coabsorbent and Thermal Recovery Compression Heat Pumping Technologies, author Mihail-Dan Staicovici

Page	Present text	Corrections to be made = the text which the "Present text" must be replaced with
viii, row 12 from top	The discharge gas superheat recovery is converted…	The recovered discharge gas superheat is converted…
17, row 14 from bottom	elaborated it 1824.	elaborated it in 1824.
21, row 10 from bottom	Than,	Then,
22, row 2 from bottom	in eqn. (1.98)	inequality (1.98)
22, row 5 from bottom	In in eqn. (1.98)	In inequality (1.98)
23, 1st row from top	In eqn. (1.100)	inequality (1.100)
23, row 8 from top	in eqn. (1.101)	inequality (1.101)
23, row 10 from top	In eqn. (1.102)	Inequality (1.102)
23, row 2 from bottom	in eqn. (1.108)	inequality (1.108)
23, row 3 from bottom	ineqn. (1.105)	Inequality (1.105)
23, row 12 from bottom	In in eqn. (1.105)	In inequality (1.105)
23, row 15 from bottom	In eqn. (1.103)	Inequality (1.103)
27, row 3 from top	calculated with the help the arithmetical mean	calculated with the help of the arithmetical mean

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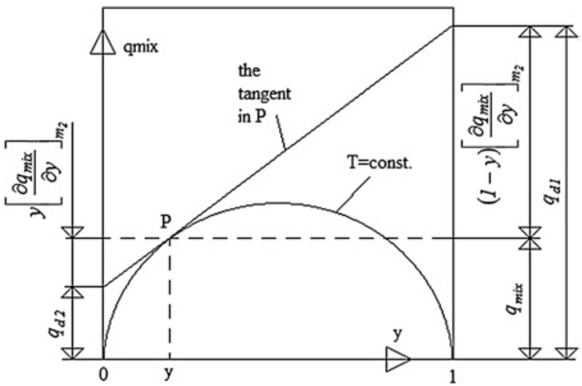
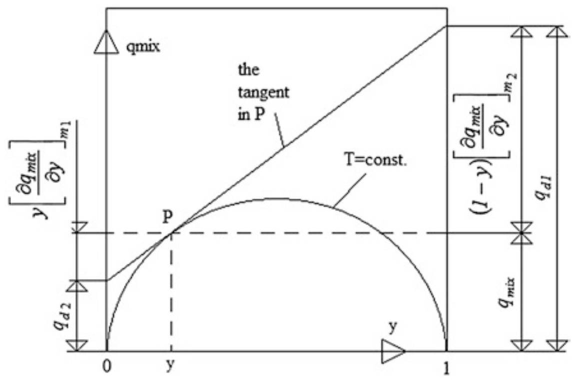
Page	Present text	Corrections to be made = the text which the "Present text" must be replaced with
29, row 18 from bottom	where $-(dE)_{irrev}$ is the exergy dissipation	where $-\frac{\partial E}{\partial t}dt$ is the exergy dissipation
36, row 12 from bottom	free energy relationship as $U = F + TS$, Eq. (1.155),	free energy relationship as $U = F + TS$, Eq. (1.164),
45, row 7 from top	Eq. (1.208) partial derivatives are given by Eqs. (1.160) and (1.161) of Table 1.1, …	Eq. (1.208) partial derivatives are given by Eqs. (1.169) and (1.170) of Table 1.1, …
61, row 6 from top	Introducing Eq. (1.244) in Eq. (1.243), it is obtained:	Introducing Eqs. (1.244) and (1.243) in Eq. (1.242), it is obtained:
61, Eq. (1.248)	$\left[\frac{\partial q_{mix}}{\partial(1-y)}\right]_{m_1}\left[\frac{\partial(1-y)}{\partial m_2}\right]_{m_1} = -y\left[\frac{\partial q_{mix}}{\partial y}\right]_{m_2}$	$\left[\frac{\partial q_{mix}}{\partial(1-y)}\right]_{m_1}\left[\frac{\partial(1-y)}{\partial m_2}\right]_{m_1} = -y\left[\frac{\partial q_{mix}}{\partial y}\right]_{m_1}$
61, Eq. (1.249)	$q_{d2} = q_{mix} - y\left[\frac{\partial q_{mix}}{\partial y}\right]_{m_2}$	$q_{d2} = q_{mix} - y\left[\frac{\partial q_{mix}}{\partial y}\right]_{m_1}$
61, rows 4 and 5 from bottom	Eqs. (1.243) and (1.246)	Eqs. (1.242) and (1.249)
Fig.1.21		

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Page	Present text	Corrections to be made = the text which the "Present text" must be replaced with
62, Eq. (1.252)	$(1-y)\left[\frac{\partial q_{d_1}}{\partial y}\right]_{m_2} + y\left[\frac{\partial q_{d_2}}{\partial y}\right]_{m_1} = 0$	$(1-y)\left[\frac{\partial q_{d_1}}{\partial y}\right]_{m_1} + y\left[\frac{\partial q_{d_2}}{\partial y}\right]_{m_2} = 0$
62, rows 9 and 10 from bottom	Eqs. (1.245) and (1.249) of q_{d1} and q_{d2} are further partially derived with respect to y for $m_2 = const.$ and with respect to $(1-y)$ for $m_1 = const.$, respectively.	Eqs. (1.245) and (1.249) of q_{d1} and q_{d2} are further partially derived with respect to y for $m_1 = const.$ and with respect to $(1-y)$ for $m_2 = const.$, respectively.
62, Eq. (1.253)	$\left[\frac{\partial q_{d_1}}{\partial y}\right]_{m_2} + \left[\frac{\partial q_{d_2}}{\partial y}\right]_{m_1} = 0$	$\left[\frac{\partial q_{d_1}}{\partial y}\right]_{m_1} + \left[\frac{\partial q_{d_2}}{\partial y}\right]_{m_2} = 0$
62, Eq. (1.254)	$\left[\frac{\partial q_{d_1}}{\partial y}\right]_{m_2} - \left[\frac{\partial q_{d_2}}{\partial y}\right]_{m_1} = -2\left[\left[\frac{\partial q_{mix}}{\partial y}\right]_{m_1} - \left[\frac{\partial q_{mix}}{\partial y}\right]_{m_2}\right]$	$\left[\frac{\partial q_{d_1}}{\partial y}\right]_{m_1} - \left[\frac{\partial q_{d_2}}{\partial y}\right]_{m_2} = 2\left[\left[\frac{\partial q_{mix}}{\partial y}\right]_{m_1} - \left[\frac{\partial q_{mix}}{\partial y}\right]_{m_2}\right]$
62, row 3 from bottom	Equations (1.252) and (1.253) are solved together for $\left[\frac{\partial q_{d_1}}{\partial y}\right]_{m_2}$ and $\left[\frac{\partial q_{d_2}}{\partial y}\right]_{m_1}$, obtaining:	Equations (1.252) and (1.253) are solved together for $\left[\frac{\partial q_{d_1}}{\partial y}\right]_{m_1}$ and $\left[\frac{\partial q_{d_2}}{\partial y}\right]_{m_2}$, obtaining:
62, Eq. (1.255)	$\left[\frac{\partial q_{d_1}}{\partial y}\right]_{m_2} = \left[\frac{\partial q_{d_2}}{\partial y}\right]_{m_1} = 0$	$\left[\frac{\partial q_{d_1}}{\partial y}\right]_{m_1} = \left[\frac{\partial q_{d_2}}{\partial y}\right]_{m_2} = 0$
70, row 7 from bottom	The specific Gibbs free enthalpy is at the same time the chemical potential of the system, $\varphi = \left(\frac{\partial \Phi}{\partial G}\right)_{T,p}$, according to eqn. (1.163).	The specific Gibbs free enthalpy is at the same time the chemical potential of the system, $\varphi = \left(\frac{\partial \Phi}{\partial G}\right)_{T,p}$, according to eqn. (1.172).
70, row 9 from bottom	specific Gibbs free enthalpy assessment, φ, $\varphi = \frac{\Phi}{G}$, $(\Phi(T,p) = H - TS$, Table 1.1, eqn. (1.159))…	specific Gibbs free enthalpy assessment, φ, $\varphi = \frac{\Phi}{G}$, $(\Phi(T,p) = H - TS$, Table 1.1, eqn. (1.168))…
73, row 12 from bottom	In eqn. (1.283), the last bracket of the right member can be calculated from eqns. (1.276) and (1.277)…	In eqn. (1.283), the last bracket of the right member can be calculated from gas phase eqns. (1.276) and (1.277)…
75, row 3 from bottom	*Gas phase*: $c_p^l(T,p_0) = b_1 + b_2T + b_3T^2$ (1.294) $v^g(T,p) = \frac{RT}{p} + c_1 + \frac{c_2}{T^3} + \frac{c_3}{T^{11}} + \frac{c_4p^2}{T^{11}}$ (1.295)	$c_p^l(T,p_0) = b_1 + b_2T + b_3T^2$ (1.294) *Gas phase*: $v^g(T,p) = \frac{RT}{p} + c_1 + \frac{c_2}{T^3} + \frac{c_3}{T^{11}} + \frac{c_4p^2}{T^{11}}$ (1.295)

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Page	Present text	Corrections to be made = the text which the "Present text" must be replaced with
75, row 5 from top	($y = 0$; $Y = 0$)	($y = 0$; $Y = 1$)
78, 1st row from top	Introducing eqns. (1.295), (1.296) and (1.306) in eqn. (1.304), the analytical expression of the gas phase free enthalpy results:	Introducing eqns. (1.295), (1.296) and (1.306) in eqn. (1.307), the analytical expression of the gas phase free enthalpy results:
128, row 8 from the bottom	This time, temperature is the internal heating temperature….	This time, T_M temperature is the internal heating temperature….
186, row 6 from top	for seen	foreseen
208, Caption of Fig. 417	Fig. 4.44	Fig. 4.45
208, row 2 from top	(see Fig. 4.44 of Sect. 4.3.2)	(see Fig. 4.45 of Sect. 4.3.1)
209, row 2 from the top	Fig. 4.44	Fig. 4.43
210, row 5 from bottom	$y_{GO,1}$	$\Delta T_{gax,R}$
211, row 6 from top	$\Delta T_{R,i,gax(\Delta T_{gax,R,\max})}$	$y_{R,i,gax} = y_{R,i,gax}\left(\Delta T_{gax,R,\max}\right)$
212, row 3 from the bottom	$\Delta T_{gax,R,}\mathrm{max} \le \Delta T_{gax,R} \le \Delta T_{gax,R,}\mathrm{max}$	$\Delta T_{gax,R,}\mathrm{min} \le \Delta T_{gax,R} \le \Delta T_{gax,R,}\mathrm{max}$
214, 4th row down from Eq. (4.122)	y_{G,j,gax^e}	$y^e_{G,j,gax}$
215, 7th row down from Eq. (4.129)	Fig. 4.37a of Sect. 4.2.3	Fig. 4.38a of Sect. 4.2.3
215,	***GHE-Gax problem study cases***	*GHE-Gax problem study cases*

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Page	Present text	Corrections to be made = the text which the "Present text" must be replaced with
215, row 3 from the bottom	Resorber Heat Excess (RHE) Gax Operation Model	Generator Heat Excess (GHE) Gax Operation Model
215, row 12 from the bottom	Results of the RHE-Gax Model Run with $\Delta T_{gax,R,\min}$- Infinite Equivalent Solutions to A GHE-Gax Problem	Results of the GHE-Gax Model Run with an intermediate $\Delta T_{gax,G}$- Infinite Equivalent Solutions to a GHE-Gax Problem
216, row 12 down from the top	$q_{G,1,gax^e} = 574.6$	$q^e_{G,1,gax} = 574.6$
218, row 5 from the bottom	According to the 6th study case, running the 4.2.1.3.2. sub-sub-paragraph model for the configuration…	According to the 6th study case, running the Sect. Generator Heat Excess (GHE) Gax Operation Model for the configuration…
250, row 13 from top	Equations (5.6) and (1.214)…	Equations (5.6) and (1.223)…
251, row 2 from bottom	Eq. (1.217)…	Eq. (1.226)…
265, row 3 from top	Important properties of the cascades at hand is emphasized next	Important properties of the cascades at hand are emphasized next
266, row 2 from top	Eq. (1.81)…	Eq. (1.65)…
266, row 6 from top	Eqs. (5.81) (5.82), (5.76) and (5.77)	Eqs. (5.81) and (5.82), Eqs. (5.76) and (5.77)
267, row 7 from top	Eqs. (1.208) and (1.209)…	Eqs. (1.217) and (1.218)…
267, row 6 from bottom	Eqs. (1.208) and (1.209)…	Eqs. (1.217) and (1.218)…

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Page	Present text	Corrections to be made = the text which the "Present text" must be replaced with
268, 1st row from bottom	(last column, the CO_2-NH_3 known cascade). Table 5.3.	(last column, the CO_2-NH_3 known cascade).
300, row 18 from bottom	Appendix 1	Appendix 7
309, row 12 from bottom	, it results that in Eq. …	, it results that inequality …
309, row 13 from bottom	Indeed, from the obvious in equations	Indeed, from the obvious inequalities
315, 1st row from bottom	Appendix 2	Appendix 7
324, row 7 from top	**Appendix 1**	**Appendix 7**
324, row 8 from top	Equation (7.34) …	i) Equation (7.34) …
324, row 11 from top	Considering in Eqs. (A7.1, 7.20, 7.28) …	Considering in Eq. (A7.1), Eqs. (7.19, 7.28) …
324, row 13 from top	**Appendix 2**	
324, row 14 from top	A simple, yet not simplistic, explanation …	ii) A simple, yet not simplistic, explanation …
331, row 12 from top	Appendix 1	Appendix 8
334, row 2 from top	(see Appendix 1 of this chapter)	(see Appendix 8 of this chapter)
338, row 13 from bottom	Appendix 1	Appendix 8
338, row 16 from bottom	Appendix 1	Appendix 8

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Page	Present text	Corrections to be made = the text which the "Present text" must be replaced with
369, 1st row from bottom	Appendix 1	Appendix 8
369, row 7 from bottom	$1 > \frac{n+1}{n+2}x < 1$	$\frac{n+1}{n+2}x < 1$
373, row 4 from bottom	**Appendix 1**	**Appendix 8**
375, 1st row		$\eta_C(\xi) = 1 - \frac{\ln\frac{T_{2a}}{T_1}}{\frac{T_{2a}}{T_1} - 1} \equiv \eta_{C,TFC} = 1 - \frac{2T_1}{T_{2a} - T_1}\frac{T_{2a} - T_1}{T_{2a} + T_1}$ (A8.4)
378, row 4 from top	$T_{ax} - T_{T_{2a}}$	$T_{ax} - T_{2a}$
391, row 6 from top	(see Appendix of this chapter)	(see Appendix 9 of this chapter)
403, row 2 from top	Eqs. (9.57) and (9.70)	Eqs. (9.56) and (9.70)
430, row 2 from bottom	(see Appendix)	(see Appendix 9)
431, row 10 from top	(see Appendix)	(see Appendix 9)
449, Eq. (9.180)	$\frac{h_1 - h_2}{T_{f,w}} + \frac{h_3 - h_4}{T_{f,s}} + (h_{ep,w,2} - h_{ep,w,1})\left(\frac{1}{T_{f,w}} - \frac{1}{T_{ep,w}}\right) + (h_{f,s,4} - h_{f,s,3})\left(\frac{1}{T_{f,s}} - \frac{1}{T_{ep,s}}\right)$	$\frac{h_1 - h_2}{T_{f,w}} + \frac{h_3 - h_4}{T_{f,s}} + (h_{ep,w,2} - h_{ep,w,1})\left(\frac{1}{T_{f,w}} - \frac{1}{T_{ep,w}}\right) + (h_{f,s,4} - h_{f,s,3})\left(\frac{1}{T_{f,s}} - \frac{1}{T_{ep,s}}\right) = 0$

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Page	Present text	Corrections to be made = the text which the "Present text" must be replaced with
451, row 12 from top	**Appendix 1**	**Appendix 9**
451, row 13 from top	The natural …	i) The natural …
452, row 3 from top	**Appendix 1**	
452, row 3 from top	Using the vector …	ii) Using the vector …
463, row 2 from top	Appendix	Appendix 10
465, row 14 from top	**Appendix**	**Appendix 10**
495, row 3 from bottom	The Heat/sink sources…	The heat/sink sources…