

Erratum

Erratum to “NMR of paramagnetic substances” [Coordination Chemistry Reviews 150 (1996)]

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The publisher regrets that this volume was published with the following errors:

- Page x, line 28: “Chapter 7 and Chapter 9, in which” should read “Chapter 7, and Chapter 9 in which”
- Page x, line 43: “for 10^{-1}m ” should read “for 10^{-10}m .”
- Page 70, line 13: “of the manifold” should read “of the J manifold”
- Page 80, line 15: “with $\tau_c[\exp(-t/\tau_c) \rightarrow 1]$, we” should read “with τ_c , $\exp(-t/\tau_c) \rightarrow 1$, and we”
- Page 84, Table 3.1, legend, line 2: “metal ions suitable” should read “metal ions more suitable”
- Page 84, Table 3.1, line 25: “ $\text{Ru}^{3+} d^5 5/2$ ” should read “ $\text{Ru}^{3+} d^5 1/2$ ”
- Page 93, line 5: “non-dispesive” should read “non-dispersive”
- Page 94, Eq. (3.20): “ $-2/3\rho_{2pz}$ ” should read “ $-2/5\rho_{2pz}$ ”
- Page 102, Table 3.3: “ $\omega_s\tau_c > 1 > \omega_I\tau_s$ ” should read “ $\omega_s\tau_c > 1 > \omega_I\tau_c$ ”
- Page 134, Table 5.1: “Coefficient” should read “Coefficients”
- Page 159, Fig. 5.18, line 1: “Experimental and calculated” should read “Calculated”
- Page 160, Ref. [37]: “J.H. Kagi” should read “J.H.R. Kägi”
- Page 175, Fig. 6.4, line 1: “site of cobalt(II)-substituted Cu_2Zn_2 ” should read “site of Cu_2Zn_2 ”
- Page 175, Fig. 6.4, line 2: “assignment reported” should read “assignment for the Cu_2Co_2 derivative reported”
- Page 177, line 4: “respect to $\rho I[1 - \exp(-x)(1-x)=x]$, we” should read “respect to ρI , $1 - \exp(-x) \simeq 1 - (1-x)=x$, and we”
- Page 177, Fig. 6.5, line 3: “the initial (dashed line)” should read “the initial slope (dashed line)”
- Page 180, Fig. 6.7, line 1: “truncated steady” should read “truncated or steady”
- Page 183, Ref. [9]: “1992” should read “1993”
- Page 206, Fig. 7.15, line 1: “ $1/2J$ ” should read “ $1/2J_{\text{H}}$ ”
- Page 206, Fig. 7.15, line 2: “ J ” should read “ J_{H} ”

Table 5.1
Coefficient relating the hyperfine coupling of an S_1 or S_2 spin system in a monomer to that in a coupled system, for each S_1 spin level [4]

S_1	S_2											
	$\frac{1}{2}$			1			$\frac{3}{2}$			2		
	S	C_1	C_2	S	C_1	C_2	S	C_1	C_2	S	C_1	C_2
$\frac{1}{2}$	1	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{3}{2}$	$\frac{1}{3}$	$\frac{2}{3}$	2	$\frac{1}{4}$	$\frac{3}{4}$	$\frac{1}{2}$	$\frac{1}{6}$	$\frac{5}{6}$
	0	—	—	$\frac{1}{2}$	$-\frac{1}{3}$	$\frac{4}{3}$	1	$-\frac{1}{4}$	$\frac{5}{4}$	$-\frac{1}{3}$	$-\frac{1}{6}$	$\frac{7}{6}$
1				2	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{5}{2}$	$\frac{3}{5}$	$\frac{11}{5}$	$\frac{3}{2}$	$\frac{7}{10}$	$\frac{19}{10}$
				1	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{3}{2}$	$\frac{4}{15}$	$\frac{11}{15}$	$\frac{1}{2}$	$\frac{4}{15}$	$\frac{59}{63}$
				0	—	—	$\frac{1}{2}$	$-\frac{2}{5}$	$\frac{3}{5}$	1	$-\frac{2}{5}$	$\frac{9}{5}$
$\frac{3}{2}$												
				3	$\frac{1}{2}$	$\frac{1}{2}$	3	$\frac{1}{2}$	$\frac{1}{2}$	4	$\frac{3}{10}$	$\frac{17}{10}$
				2	$\frac{1}{2}$	$\frac{1}{2}$	2	$\frac{1}{2}$	$\frac{1}{2}$	3	$\frac{1}{5}$	$\frac{16}{5}$
				1	$\frac{1}{2}$	$\frac{1}{2}$	1	$\frac{1}{2}$	$\frac{1}{2}$	2	0	$\frac{1}{2}$
				0	—	—	0	—	—	1	$-\frac{1}{2}$	$\frac{3}{2}$
2												
				4	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{13}{2}$	$\frac{1}{24}$	$\frac{17}{24}$	5	$\frac{4}{11}$	$\frac{23}{33}$
				3	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{11}{2}$	$\frac{1}{12}$	$\frac{11}{12}$	4	$\frac{10}{33}$	$\frac{17}{21}$
				2	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{9}{2}$	$\frac{1}{24}$	$\frac{16}{24}$	3	$\frac{4}{21}$	$\frac{37}{35}$
				1	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{7}{2}$	$\frac{1}{12}$	$\frac{7}{12}$	2	$-\frac{2}{35}$	$\frac{9}{5}$
				0	—	—	0	—	—	1	$-\frac{4}{5}$	$\frac{2}{5}$

7	$\frac{1}{12}$	$\frac{37}{60}$	$\frac{27}{40}$	$\frac{19}{24}$	$\frac{13}{12}$	$\frac{9}{4}$	7	$\frac{13}{2}$	$\frac{79}{143}$	$\frac{19}{33}$	$\frac{13}{21}$	$\frac{5}{7}$	1	3	$\frac{1}{12}$	$\frac{1}{12}$	$\frac{1}{12}$	$\frac{1}{12}$	$\frac{1}{12}$	$\frac{1}{12}$	$\frac{1}{12}$	—
5	$\frac{1}{12}$	$\frac{23}{60}$	$\frac{13}{40}$	$\frac{5}{24}$	$-\frac{1}{12}$	$-\frac{5}{4}$	6	$\frac{13}{2}$	$\frac{64}{143}$	$\frac{14}{33}$	$\frac{8}{21}$	$\frac{2}{7}$	0	-2	$\frac{1}{12}$	$\frac{1}{12}$	$\frac{1}{12}$	$\frac{1}{12}$	$\frac{1}{12}$	$\frac{1}{12}$	$\frac{1}{12}$	—
6	5	4	3	2	1	$\frac{13}{2}$	$\frac{11}{2}$	$\frac{9}{2}$	$\frac{7}{2}$	$\frac{5}{2}$	$\frac{3}{2}$	$\frac{1}{2}$	7	6	5	4	3	2	1	0		
6	$\frac{1}{11}$	$\frac{56}{99}$	$\frac{38}{63}$	$\frac{24}{35}$	$\frac{14}{15}$	$\frac{8}{5}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	—									
5	$\frac{1}{11}$	$\frac{43}{99}$	$\frac{25}{63}$	$\frac{11}{35}$	$\frac{1}{15}$	$-\frac{5}{3}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	—									
$\frac{11}{2}$	$\frac{9}{2}$	$\frac{7}{2}$	$\frac{5}{2}$	$\frac{3}{2}$	$\frac{1}{2}$	6	5	4	3	2	1	0										
$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	—																	
$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	—																	
5	4	3	2	1	0																	

Operator name	Matrix form	<i>I</i> spins	<i>S</i> spins
$I_y S_z$	$\frac{i}{4} \begin{bmatrix} 0 & 0 & -1 & 0 \\ 0 & 0 & 0 & 1 \\ 1 & 0 & 0 & 0 \\ 0 & -1 & 0 & 0 \end{bmatrix}$		
$I_z S_z$	$\frac{1}{4} \begin{bmatrix} 1 & 0 & 0 & 0 \\ 0 & -1 & 0 & 0 \\ 0 & 0 & -1 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}$		
$I_z S_x$	$\frac{1}{4} \begin{bmatrix} 0 & 1 & 0 & 0 \\ 1 & 0 & 0 & 0 \\ 0 & 0 & 0 & -1 \\ 0 & 0 & -1 & 0 \end{bmatrix}$		
$I_z S_y$	$\frac{i}{4} \begin{bmatrix} 0 & -1 & 0 & 0 \\ 1 & 0 & 0 & 0 \\ 0 & 0 & 0 & 1 \\ 0 & 0 & -1 & 0 \end{bmatrix}$		
$I_x S_x$	$\frac{1}{4} \begin{bmatrix} 0 & 0 & 0 & 1 \\ 0 & 0 & 1 & 0 \\ 0 & 1 & 0 & 0 \\ 1 & 0 & 0 & 0 \end{bmatrix}$		
$I_y S_y$	$\frac{1}{4} \begin{bmatrix} 0 & 0 & 0 & -1 \\ 0 & 0 & 1 & 0 \\ 0 & 1 & 0 & 0 \\ -1 & 0 & 0 & 0 \end{bmatrix}$		
$I_x S_y$	$\frac{i}{4} \begin{bmatrix} 0 & 0 & 0 & -1 \\ 0 & 0 & 1 & 0 \\ 0 & -1 & 0 & 0 \\ 1 & 0 & 0 & 0 \end{bmatrix}$		
$I_y S_x$	$\frac{i}{4} \begin{bmatrix} 0 & 0 & 0 & -1 \\ 0 & 0 & -1 & 0 \\ 0 & 1 & 0 & 0 \\ 1 & 0 & 0 & 0 \end{bmatrix}$		

Fig. V.1. Product operators for a two-spin system. The density matrix form is shown along with the vector representation (from Ref. [5], p. 8).

Operator name	Matrix form	<i>I</i> spins	<i>S</i> spins
1	$\begin{bmatrix} 1 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}$		
I_x	$\frac{1}{2} \begin{bmatrix} 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 1 \\ 1 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 \end{bmatrix}$		
I_y	$\frac{i}{2} \begin{bmatrix} 0 & 0 & -1 & 0 \\ 0 & 0 & 0 & -1 \\ 1 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 \end{bmatrix}$		
I_z	$\frac{1}{2} \begin{bmatrix} 1 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & 0 & -1 & 0 \\ 0 & 0 & 0 & -1 \end{bmatrix}$		
S_x	$\frac{1}{2} \begin{bmatrix} 0 & 1 & 0 & 0 \\ 1 & 0 & 0 & 0 \\ 0 & 0 & 0 & 1 \\ 0 & 0 & 1 & 0 \end{bmatrix}$		
S_y	$\frac{i}{2} \begin{bmatrix} 0 & -1 & 0 & 0 \\ 1 & 0 & 0 & 0 \\ 0 & 0 & 0 & -1 \\ 0 & 0 & 1 & 0 \end{bmatrix}$		
S_z	$\frac{1}{2} \begin{bmatrix} 1 & 0 & 0 & 0 \\ 0 & -1 & 0 & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & -1 \end{bmatrix}$		
$I_x S_z$	$\frac{1}{4} \begin{bmatrix} 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & -1 \\ 1 & 0 & 0 & 0 \\ 0 & -1 & 0 & 0 \end{bmatrix}$		

Fig. V.1. (continued).

Page 213, Fig. 7.20, line 2: “(Ln = Pr³⁺)” should read “(Ln = Dy³⁺)”

Page 225, Eq. (8.3): “3/4” should read “3/5”

Page 236, Fig. 8.12, line 2: “and 77 K-SSB denotes” should read “and 77 K. SSB denotes”

Page 240, Section 8.4.3.1, line 6: “ B_0 ” should read “ $\mathbf{B}_0$ ”

Page 240, Section 8.4.3.1, line 11: “for all the initial values” should read “for all values”

Page 252, last line: “10⁻⁸s” should read “10⁻⁸][s”

Page 256, Fig. 9.7, line 1: “spectrum a ” should read “spectrum (a)”

Page 256, Fig. 9.7, line 2: “spectrum b ” should read “spectrum (b)”

Page 256, Fig. 9.7, line 2: “signals in b ” should read “signals in (b)”

Page 256, line 2: “negative for macromolecules” should read “negative (for macromolecules),”

Page 256, line 2: “off resonance” should read “off-resonance”

Page 286, Eq. (V13): “ $= \mathbf{R}_y^\dagger \boldsymbol{\sigma} \mathbf{R}_y(\alpha)$ ” should read “ $= \mathbf{R}_y^\dagger(\alpha) \boldsymbol{\sigma} \mathbf{R}_y(\alpha)$ ”

Page 289, final equation: “ $\int \cdot dt$ ” should read “ $\int dt$ ”

Page 291, Appendix VI: “Nuclear Bohr Magneton μ_B ” should read “Nuclear Bohr Magneton μ_N ”