1. Record Nr. UNINA9910877316703321

Autore	Alberty Robert A
Titolo	Biochemical thermodynamics [[electronic resource]] : applications of Mathematica / / Robert A. Alberty
Pubbl/distr/stampa	Hoboken, N.J. ; ; Chichester, : John Wiley, c2006
ISBN	1-280-41123-6 9786610411238 0-470-03646-X 0-470-03645-1
Descrizione fisica	1 online resource (482 p.)
Collana	Methods of biochemical analysis ; ; v. 48
Disciplina	572.436
Soggetti	Thermodynamics - Mathematics Physical biochemistry Bioenergetics Termodinàmica Bioquímica física Bioenergètica Llibres electrònics
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di contenuto	Biochemical Thermodynamics: Applications of Mathernatica; Contents; Preface; Chapter 1 Thermodynamics of the Dissociation of Weak Acids; Chapter 2 Introduction to Apparent Equilibrium Constants; Chapter 3 Biochemical Reactions at Specified Temperature and Various pHs; Chapter 4 Biochemical Reactions at Various pHs and Various Temperatures; Chapter 5 Biochemical Reactions at Various pHs, pMgs, and Various Temperatures; Chapter 6 Development of a Database on Species; Chapter 7 Uses of Matrices in Biochemical Thermodynamics; Chapter 8 Oxidoreductase Reactions (Class 1) at 298.15 K Chapter 9 Transferase Reactions (Class 2) at 298.15 KChapter 10 Hydrolase Reactions (Class 3) at 298.15 K; Chapter 11 Lyase Reactions (Class 4), Isomerase Reactions (Class 5), and Ligase Reactions (Class 6) at 298.15 K; Chapter 12 Survey of Reactions at 298.15 K; Chapter 13 Survey of Reactions at Various Temperatures; Chapter 14

	Thermodynamics of th Binding of Ligands by Proteins; Chapter 15 Calorimetry of Biochemical Reactions; Appendix; 1. BasicBiochemData3. nb; 2. Tables of Transformed Thermodynamic Properties; 3. Glossary of Names of Reactants 4. Glossary of Symbols for Thermodynamic Properties5. List of Mathematica Programs; 6. Sources of Biochemical Thermodynamic Information on the Web; Index
Sommario/riassunto	Navigate the complexities of biochemical thermodynamics with Mathematica(r)Chemical reactions are studied under the constraints of constant temperature and constant pressure; biochemical reactions are studied under the additional constraints of pH and, perhaps, pMg or free concentrations of other metal ions. As more intensive variables are specified, more thermodynamic properties of a system are defined, and the equations that represent thermodynamic properties as a function of independent variables become more complicated.This sequel to Robert Alberty's popular Thermodynamics