



Biochemical Thermodynamics: Applications of Mathematica

By Robert A. Alberty

John Wiley Sons Inc, United States, 2006. Online resource. Book Condition: New. 1. Auflage. 282 x 211 mm. Language: English . Brand New Book. 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 of Biochemical Reactions describes how researchers will find Mathematica(r) a simple and elegant tool, which makes it possible to perform complex calculations that would previously have been impractical. Biochemical Thermodynamics: Applications of Mathematica(r) provides a comprehensive and rigorous treatment of biochemical thermodynamics using Mathematica(r) to practically resolve thermodynamic issues. Topics covered include: Thermodynamics of the dissociation of weak acids Apparent equilibrium constants Biochemical reactions at specified temperatures and various pHs Uses of matrices in biochemical thermodynamics Oxidoreductase, transferase, hydrolase, and lyase reactions Reactions at 298.15K Thermodynamics of the binding of ligands by proteins Calorimetry of biochemical reactions...

Reviews

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