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| 课程名（Coursename） Statistical Mechanics  课程代码（Coursenumber） B6  课程对象（Audience） Undergraduate  开课教师（Teacher） Prof. D. Frenkel  学期（Semester） M 6–8 & L 1–3  课程描述（Description）） Dr Keeler’s introductory lectures on Statistical Mechanics showed how the thermodynamic properties of a macroscopic sample of matter can be expressed in terms of the energy levels of individual molecules and the interactions between them. To move on from here, we need to introduce the concept of Gibbs ensembles, and then we can express the thermodynamic and transport properties of a macroscopic sample of matter in terms of the basic interactions between molecules. Except for some limiting situations like the ideal gas, approximations must be introduced to allow explicit calculations. One of the generic approximations is mean-field theory, which provides a reasonable description of many systems and phenomena, such as phase transitions, magnetism and electrical double layers around membranes. The course will provide an introduction to ensemble theory, classical statistics, mean field methods and the basic theory of transport phenomena. The concepts will be illustrated by applications to Physical Chemistry and Condensed Matter Science.  课时信息（Totalhours）  教参信息（Textbookinfo） 1 Thermodynamics, Statistical Thermodynamics, & Kinetics (2nd Edition) by Thomas Engel and Philip Reid (Hardcover - Mar. 22, 2009) ISBN-13: 978-0321615039 世界各地拥有馆藏的图书馆（OCLC）:66 2 Physical Chemistry for the Biological Sciences (Methods of Biochemical Analysis) by Gordon G. Hammes (Hardcover - Apr. 10, 2007)  ISBN-13: 978-0470122020 世界各地拥有馆藏的图书馆（OCLC）:322 3 Oxoacidity: reactions of oxo-compounds in ionic solvents (Comprehensive Chemical Kinetics) by Victor L. Cherginets (Hardcover - June 23, 2005) ISBN-13: 978-0444517821 世界各地拥有馆藏的图书馆（OCLC）:120 4 Thermodynamics and Kinetics for the Biological Sciences by Gordon G. Hammes (Paperback - June 16, 2000) ISBN-13: 978-0471374916 5 Statistical Thermodynamics: Fundamentals and Applications by Normand M. Laurendeau (Hardcover - Nov. 21, 2005) ISBN-13: 978-0521846356 世界各地拥有馆藏的图书馆（OCLC）:172 6 Statistical Mechanics by Donald A. McQuarrie (Hardcover - May 2000) ISBN-13: 978-1891389153 7 Thermodynamics, Statistical Thermodynamics, & Kinetics (2nd Edition) by Thomas Engel and Philip Reid (Hardcover - Mar. 22, 2009) ISBN-13: 978-0321615039 世界各地拥有馆藏的图书馆（OCLC）:66 8 An Introduction to Thermodynamics and Statistical Mechanics by Keith S. Stowe (Hardcover - June 11, 2007) ISBN-13: 978-0521865579 世界各地拥有馆藏的图书馆（OCLC）:170 9 Equilibrium and Non-Equilibrium Statistical Thermodynamics by Michel Le Bellac, Fabrice Mortessagne, and G. George Batrouni (Hardcover - May 3, 2004) ISBN-13: 978-0521821438 世界各地拥有馆藏的图书馆（OCLC）:223 10 Thermodynamics and Statistical Mechanics (Classical Theoretical Physics) by Walter Greiner, Ludwig Neise, Horst Stöcker, and D. Rischke (Paperback - May 9, 1995) ISBN-13: 978-0387942995 11 Introduction to Modern Statistical Mechanics by David Chandler (Paperback - Sept. 17, 1987) ISBN-13: 978-0195042771 |