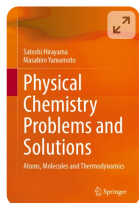


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Physical Chemistry Problems and Solutions

Atoms, Molecules and Thermodynamics

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Authors: [Satoshi Hirayama](#), [Masahiro Yamamoto](#)

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A solid foundation in physical chemistry concepts is fundamentally important for those wishing to make meaningful contributions to a diverse array of rapidly developing fields including renewable energy, environmental sustainability, biomedical technology, and material science and engineering. Effective solutions to real-world technological challenges require depth of knowledge and an ability to solve problems outside the usual contextual structure found in standard physical chemistry textbooks.

By using this book together with *Physical Chemistry Problems and Solutions: Distributions, Reactions and Structures*, in which nearly nine hundred problems are provided, the reader is able to identify knowledge gaps quickly and readily address them by consulting the accompanying comprehensively worked solutions. This approach of presenting probing questions "in isolation" fosters a deeper understanding of the subject and the development of problem-solving skills.

Keywords

Chemical Thermodynamics

Chemical Kinetics

Chemical Equilibrium

Chemical Statistical Mechanics

Molecular Structures

Authors and Affiliations

Kyoto Institute of Technology, Kyoto, Japan

Satoshi Hirayama

Konan University, Kobe, Japan

Masahiro Yamamoto

About the authors

Satoshi Hirayama was awarded a Ph.D. from Kyoto University in 1983. His specialties are physical chemistry and photochemistry. He was promoted to full professor of the Kyoto Institute of Technology (K.I.T.) in 1973 and retired there in 2006 as a professor emeritus. During his service at K.I.T, he received a British Council Scholarship and did research at Southampton University (U.K.) from 1976 to 1978. He collaborated as a visiting professor with researchers at Melbourne University (Australia), Saskatoon University (Canada), and Strathclyde University (U.K.), supported by the JSPS (Japan). He was appointed a visiting professor at IMS (Japan) for two years starting from 1993. He has published many peer-reviewed scientific papers and is the co-author of the translation of *Single Photon Counting* by D. Phillips and D. O'Connor. He has 36 years of teaching experience at K.I.T and years at Konan University (Japan).

Masahiro Yamamoto received his Dr. Eng. degree from Kyoto University (Japan) in 1991, investigating the absorption mechanism of oxygen by α -zirconium. He was an assistant professor at the Institute of Atomic Energy, Kyoto University, from 1985 to 1999 (surface science and first-principles calculation). He was a visiting scientist for one year at the Ames Lab, Iowa State University (U.S.A.); an associate professor in the Department of Energy and Hydrocarbon Chemistry, Kyoto University, from 1999 to 2009 (analytical electrochemistry); and a professor in the Department of Chemistry of Konan University, from 2009 (physical chemistry of surfaces and interfaces). He is the co-author of 100 peer-reviewed scientific articles and five books, including the translation of Foundations of Science Mathematics, by D.S. Sivia and R.G. Rawlings, Oxford University Press, 1999.


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