



Principles Of Adsorption And Reaction On Solid Surfaces

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Summary : Free principles of adsorption and reaction on solid surfaces pdf download - principles of adsorption and reaction on solid surfaces as with other books in the field principles of adsorption and reaction on solid surfaces describes what occurs when gases come in contact with various solid surfaces but unlike all the others it also explains why while the theory of surface reactions is still under active development the approach dr richard masel takes in this book is to outline general principles derived from thermodynamics and reaction rate theory that can be applied to reactions on surfaces and to indicate ways in which these principles may be applied the book also provides a comprehensive treatment of the latest quantitative surface modeling techniques with numerous examples of their use in the fields of chemical engineering physical chemistry and materials science a valuable working resource and an excellent graduate-level text principles of adsorption and reaction on solid surfaces provides readers with a detailed look at the latest advances in understanding and quantifying reactions on surfaces in-depth reviews of all crucial background material 40 solved examples illustrating how the methods apply to catalysis physical vapor deposition chemical vapor deposition electrochemistry and more 340 problems and practice exercises sample computer programs universal plots of many key quantities detailed class-tested derivations to help clarify key results the recent development of quantitative techniques for modeling surface reactions has led to a number of exciting breakthroughs in our understanding of what happens when gases come in contact with solid surfaces while many books have appeared describing various experimental modeling techniques and the results obtained through their application until now there has been no single-volume reference devoted to the fundamental principles governing the processes observed the first book to focus on governing principles rather than experimental techniques or specific results principles of adsorption and reaction on solid surfaces provides students and professionals with a quantitative treatment of the application of principles derived from the fields of thermodynamics and reaction rate theory to the investigation of gas adsorption and reaction on solid surfaces writing for a broad-based audience including among others chemical engineers chemists and

materials scientists dr richard i masel deftly balances basic background in areas such as statistical mechanics and kinetics with more advanced applications in specialized areas principles of adsorption and reaction on solid surfaces was also designed to provide readers an opportunity to quickly familiarize themselves with all of the important quantitative surface modeling techniques now in use to that end the author has included all of the key equations involved as well as numerous real-world illustrations and solved examples that help to illustrate how the equations can be applied he has also provided computer programs along with universal plots that make it easy for readers to apply results to their own problems with little computational effort principles of adsorption and reaction on solid surfaces is a valuable working resource for chemical engineers physical chemists and materials scientists and an excellent text for graduate students in those disciplines

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