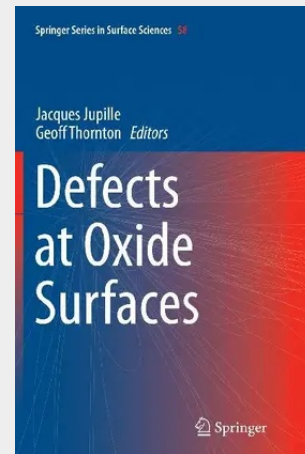


Defects at Oxide Surfaces

This book presents the basics and characterization of defects at oxide surfaces. It provides a state-of-the-art review of the field, containing information to the various types of surface defects, describes analytical methods to study defects, their chemical activity and the catalytic reactivity of oxides. Numerical simulations of defective structures complete the picture developed. Defects on planar surfaces form the focus of much of the book, although the investigation of powder samples also form an important part. The experimental study of planar surfaces opens the possibility of applying the large armoury of techniques that have been developed over the last half-century to study surfaces in ultra-high vacuum. This enables the acquisition of atomic level data under well-controlled conditions, providing a stringent test of theoretical methods. The latter can then be more reliably applied to systems such as nanoparticles for which accurate methods of characterization of structure and electronic properties have yet to be developed. The book gives guidance to tailor oxide surfaces by controlling the nature and concentration of defects. The importance of defects in the physics and chemistry of metal oxide surfaces is presented in this book together with the prominent role of oxides in common life. The book contains contributions from leaders in the field. It serves as a reference for experts and beginners in the field.

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