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Subvolume A

Adsorbed Layers on Surfaces

Part 5

Adsorption of Molecules on Metal, Semiconductor and Oxide Surfaces

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Preface

Surface Science is understood as a relatively young scientific discipline, concerned with the physical and chemical properties of and phenomena on clean and covered solid surfaces, studied under a variety of conditions. The adsorption of atoms and molecules on solid surfaces is, for example, such a condition, connected with more or less drastic changes of all surface properties. An adsorption event is frequently observed in nature and found to be of technical importance in many industrial processes. For this reason, Surface Science is interdisciplinary by its very nature, and as such an important intermediary between fundamental and applied research. Intense world-wide research in this field over the last 50 years has lead to a considerable degree of maturity, such that a documentation of quantitative results in a single source seems desirable. Tribute is being paid to this effect by the renowned Series of LANDOLT-BÖRNSTEIN whose editor-in-chief Werner Martienssen, Frankfurt/ Main, has initiated several volumes of collected scientific data in the field of Surface Science.

The beginning has been made with LANDOLT-BÖRNSTEIN volume III/24, entitled *Physics of Solid Surfaces*. This volume, consisting of four subvolumes, appeared in 1993-96 and covers the properties of clean solid surfaces. The current volume III/42 is devoted to *Physics of Covered Solid Surfaces* and, in particular, to *Adsorbed Layers on Surfaces*. It is as such a collection of data obtained for adsorbates on well-defined crystalline surfaces. "Well-defined" means surfaces of known crystallographic structure and chemical composition. It was almost clear at the beginning, that the amount of general information and quantitative data on *Adsorbed Layers on Surfaces* is enormous, too large to fit into a single book. Hence several subvolumes had to be planned. Unfortunately, the chapters anticipated for each of the subvolumes did not arrive synchronously with the production schedule, such that the sequence of chapters actually printed in the subvolumes deviates from that in the original outline of the whole volume. We apologize for this inconvenience, but in the age of electronic information distribution this problem will be solved, once all volumes are available electronically. Search routines will guide the reader to the data of his/her desire. Until that time, the index of each subvolume will have to do.

Four subvolumes A1 to A4 of volume III/42 have already appeared in the years 2001-2005. The present subvolume A5 entitled *Adsorbed Molecules on Metal, Semiconductor and Oxide Surfaces* is the final one in this sequence.

Finally, it is my great pleasure to thank all authors of this volume for their excellent contributions, and the editing and production offices of the Landolt-Börnstein Section of the Springer-Verlag for efficient cooperation and excellent support.

Jülich, May 2006

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