

Non-Stoichiometric Compounds

Surfaces, Grain Boundaries and Structural Defects

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Non-Stoichiometric Compounds

Surfaces, Grain Boundaries and Structural Defects

edited by

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TABLE OF CONTENTS

Preface	iii
List of Participants	xi
<u>I. Non-stoichiometry and Defect Structure</u>	1
C.B. Alcock The Control of Stoichiometry in Oxide Systems	3
Y. Saito and T. Maruyama Phase Relations of Metal Oxides by Coulometric Titration	11
K. Naito, T. Tsuji and T. Matsui Defect Structure and the Related Properties of UO_2 and Doped UO_2	27
A.N. Cormack Defect Interactions, Extended Defects and Non-stoichiometry in Ceramic Oxides	45
S.M. Tomlinson and C.R.A. Catlow Computer Simulation Studies of $Fe_{1-x}O$ and $Mn_{1-x}O$	53
F. Sim and C.R.A. Catlow Mott-Littleton and Hartree-Fock Calculations on Defects in α -Quartz	77
Ming-Yih Su and G. Simkovich Point Defect Structure of Chromium (III) Oxide	93
J. Janowski, J. Nowotny and M. Rekas Non-stoichiometry and Defect Structure of FeO	115
O.T. Sørensen Thermodynamic and Structural Evidence for the Presence of Defect Clusters in Some Non-stoichiometric Oxides	123
D. Hennings and R. Waser Defect Chemistry of $BaTiO_3$ and $SrTiO_3$: Practical Aspects and Application to Electronic Ceramics	137
G. Boureau, M. Benzakour and R. Tetot Statistical Thermodynamics of Non-stoichiometric Oxides	155
A. Steinbrunn, M. Bindo and J.C. Colson Electrical Conductivity Study of Cobalt Molybdate $CoMoO_4$	163

M.O. Selme, G. Toussaint and P. Pecheur Electronic Structure of Transition Metal Impurities and of Surface Defects in SrTiO ₃	173
C. Karatas Cation Distribution and Non-stoichiometry in MnCr ₂ O ₄ - -NiCr ₂ O ₄ Spinel Solid-Solutions	187
<u>II. Surface and Grain Boundary Phenomena</u>	201
W. Hirschwald Characterization of Defects on Oxide Surfaces and Their Impact on Surface Reactivity and Catalysis	203
M. Déchamps and F. Barbier Interface Transport in Monoxides	221
M.H. Sukkar and H.L. Tuller ZnO Interface Electrical Properties—Role of Oxygen Chemisorption	237
J. Nowotny, M. Sloma and W. Weppner Near-Surface Defect Structure of CoO in the Vicinity of the CoO/Co ₃ O ₄ Phase Boundary	265
R. Freer, V.A. Roberts and F. Azough Grain Boundary Phenomena in Some Electronic and Magnetic Ceramics	279
B.A. Boukamp, K.J. de Vries and A.J. Burggraaf Surface Oxygen Exchange in Bismuth Oxide Based Materials	299
L.C. Dufour Defects and Reactivity at Oxide Surfaces: Experimental Aspects of the Interaction of Hydrogen, CO and CO ₂ with the NiO {001} Surface	311
Hj. Matzke Nuclear Techniques in Surface Studies of Ceramics	321
J.H. Harding, S.C. Parker and P.W. Tasker Calculated Grain Boundary Structures in NiO: Comparison with Experiment	337
<u>III. Transport Properties</u>	351
P.F. Dennis and R. Freer Oxygen Self Diffusion in Synthetic Rutile under Hydrothermal Conditions	353

E. Moya and F. Moya Short-Circuit Diffusion in $\alpha\text{Al}_2\text{O}_3$	363
F. Perinet, J. Le Duigou and C. Monty Oxygen Self-Diffusion in Volume and in Grain Boundaries of Cu_{2-x}O	387
K. Andersson and G. Borchardt Defect Structure and Diffusion in Mg_2SiO_4 (Forsterite) at High Temperature	399
G. Petot-Ervas, H. Klimczyk, C. Monty, J. Janowski and C. Petot Influence of Chromium Segregation on the Transport Properties of Iron Monoxide	411
V.S. Stubican and C.M. Lim Influence of Point Defects on the Near-Surface Diffusion in Some Oxide Systems	423
<u>IV. High T_c Oxide Superconductors</u>	433
C.R.A. Catlow and S.M. Tomlinson Static Simulation Studies of La_2CuO_4	435
G.M. Choi, H.L. Tuller and M.-J. Tsai Defects and Transport in $\text{YBa}_2\text{Cu}_3\text{O}_{7-x}$	451
T. Matsui, K. Naito and S. Hagino Oxygen Nonstoichiometry and Chemical Diffusion Coefficient of Oxygen in $\text{Ba}_2\text{YCu}_3\text{O}_{7-x}$	471
G.P. Sykora, M.-Y. Su and T.O. Mason Point Defects and Transport in Small Polaron Systems	485
D.D. Sarma Electronic Structure of High T_c Cuprates by Electron Spectroscopies	499
A. Mehta and D.M. Smyth Nonstoichiometry and Defect Equilibria in $\text{YBa}_2\text{Cu}_3\text{O}_x$	509
<u>V. Redox Processes</u>	521
E. Fromm Model Calculations of Metal Oxidation at Ambient Temperatures	523
C. Gleitzer Point Defects and the Mechanisms Involved in the Reduction of Hematite into Magnetite	535

T. Werber Joining of Metallic Grains by Thermal Oxidation	547
B. Leibold and N. Nicoloso Impedance and Voltage Relaxation Studies of the Oxygen Sensor Systems Pt/O ₂ /YSZ, Pt/O ₂ /TiO ₂ and Pt/O ₂ /δ-Bi ₂ O ₃	557
Subject Index	581

PREFACE

The material in this book is based on invited and contributed papers presented at the NATO Advanced Research Workshop on "Non-stoichiometric Compounds" held in Ringberg Castle, Rottach-Egern (Bavarian Alps), Germany, July 3-9, 1988. The workshop followed previous meetings held in Mogilany, Poland (1980), Alenya, France (1982), Penn State, USA (1984) and Keele University, UK (1986).

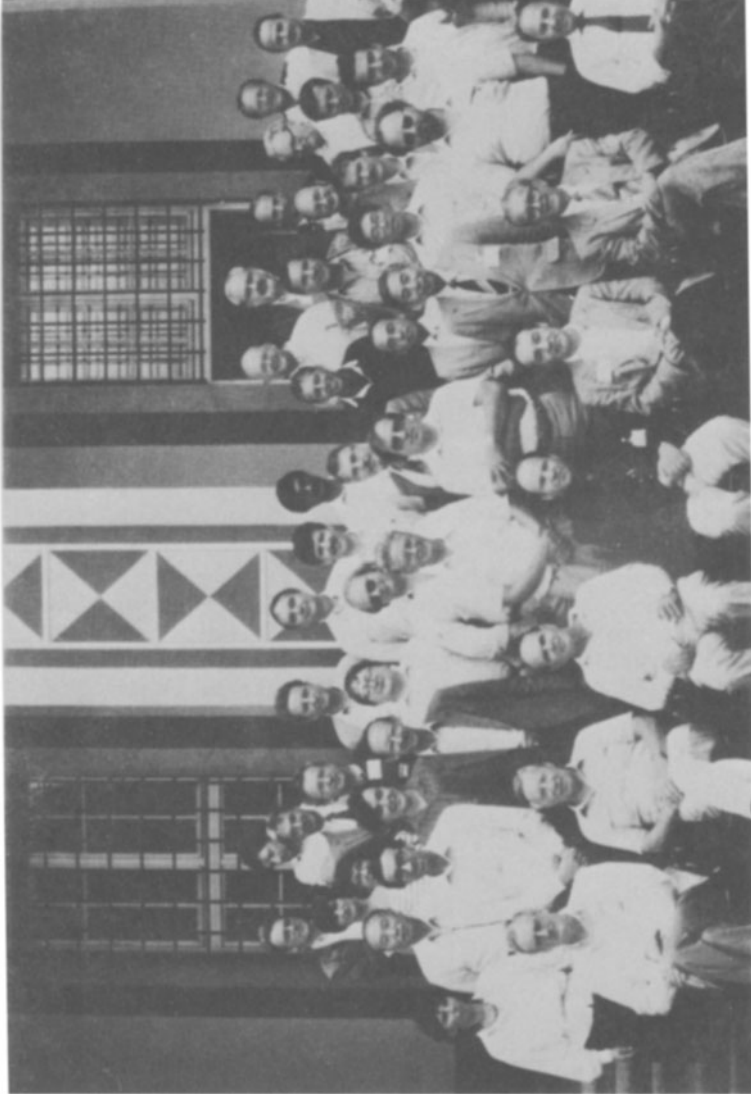
The aim of these workshops is to present and discuss up-to-date knowledge in the study of non-stoichiometry and its effect on materials properties as well as to indicate the most urgent research pathways required in this field. Since the subject of non-stoichiometry is interdisciplinary, the workshops bring together solid state physicists and chemists, surface scientists, materials scientists, ceramists and metallurgists.

The present workshop, which gathered 42 scientists of an international reputation, mainly considered the effect of surfaces, grain boundaries and structural defects on materials properties. From discussions during this meeting it emerged that correct understanding of properties of ceramic materials requires urgent studies on the defect structure of the interface region. Progress in this direction requires the development of the interface defect chemistry. This is the task for materials scientists in the near future.

The present proceedings includes both theoretical and experimental work on general aspects of non-stoichiometry, defect structure and diffusion in relation to the bulk and to the interface region of such materials as high tech ceramics, solid electrolytes, electronic ceramics, nuclear materials and high T_c oxide superconductors.

We would like to acknowledge the financial support of the NATO Science Committee and the Max-Planck-Society. Thanks are due to Mr. W. Kernler, Mrs. I. Koch, Dr. N. Nicoloso, Mr. W. Payer, Dr. M. Rekas and Dr. F. Sim for their kind help in the organization the meeting. We would like also to thank all authors for their co-operation in the preparation of these proceedings.

Janusz Nowotny
Werner Weppner



WORKSHOP PARTICIPANTS. First row (sitting) from left: Smyth, Alcock, Stubican, Nowotny, Simkovich, Janowski, Hirschwald; second row: Moya, Naito, Freer, Gleitzer, Sorensen, Weppner, Saito, Tuller; third row: Alcock, Smyth, Petot-Ervas, Catlow, Cormack, de Vries, Matsui, Chiang, Boukamp, Rekas, Karatas; last row: Dechamps, Nicoloso, Schulz, Tasker, Fromm, Eror, Mason, Sarma, Moya, Hennings, Monty, Colson, Pecheur, Borchardt, Werber, Matzke, Dufour.

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