

Contents

Preface	75
Atom-resolved noncontact atomic force microscopic and scanning tunneling microscopic observations of the structure and dynamic behavior of CeO ₂ (1 1 1) surfaces Y. Namai, K.-I. Fukui and Y. Iwasawa	79
One step towards bridging the materials gap: surface studies of TiO ₂ anatase U. Diebold, N. Ruzycki, G.S. Herman and A. Selloni	93
Using scanning tunneling microscopy to characterize adsorbates and reactive intermediates on transition metal oxide surfaces E.I. Altman and R.E. Tanner	101
Understanding silica-supported metal catalysts: Pd/silica as a case study B.K. Min, A.K. Santra and D.W. Goodman	113
Adsorption on perfect and reduced surfaces of metal oxides M. Calatayud, A. Markovits, M. Menetrey, B. Mguig and C. Minot	125
Electronic and structural properties of Sn _x Ti _{1-x} O ₂ solid solutions: a periodic DFT study F.R. Sensato, R. Custodio, E. Longo, A. Beltrán and J. Andrés	145
Proton abstraction ability of MgO: a DFT cluster model study of the role of surface geometry M.M. Branda, P.G. Belelli, R.M. Ferullo and N.J. Castellani	153
Catalytic activity of RuO ₂ (1 1 0) in the oxidation of CO S. Wendt, A.P. Seitsonen and H. Over	167
Electronic and chemical properties of mixed-metal oxides: basic principles for the design of DeNO _x and DeSO _x catalysts J.A. Rodriguez	177
Oxidation activity of iron phosphate and its characters M. Ai	193
Effect of the local structure of Ti-oxide species on the photocatalytic reactivity and photo-induced super-hydrophilic properties of Ti/Si and Ti/B binary oxide thin films S. Dohshi, M. Takeuchi and M. Anpo	199
Co ⁰ from partial reduction of La(Co,Fe)O ₃ perovskites for Fischer–Tropsch synthesis L. Bedel, A.C. Roger, C. Estournes and A. Kiennemann	207
Catalytic aminolysis of epoxide by alumina prepared from amine-protected Al precursor W.M. Xue, M.C. Kung, A.I. Kozlov, K.E. Popp and H.H. Kung	219
Selective oxidation of alcohols using octahedral molecular sieves: influence of synthesis method and property–activity relations V.D. Makwana, L. Javier Garcés, J. Liu, J. Cai, Y.-C. Son and S.L. Suib	225
Ruthenium as oxidation catalyst: bridging the pressure and material gaps between ideal and real systems in heterogeneous catalysis by applying DRIFT spectroscopy and the TAP reactor J. Aßmann, E. Löffler, A. Birkner and M. Muhler	235
Conversion of N ₂ O to N ₂ on TiO ₂ (1 1 0) M.A. Henderson, J. Szanyi and C.H.F. Peden	251

Oxidation of NH_3 on polycrystalline copper and $\text{Cu}(1\ 1\ 0)$: a combined FT-IRAS and kinetics investigation I. Louis-Rose, C. Méthivier and C.-M. Pradier	267
Reaction of methanol on stoichiometric and O-terminated $\alpha\text{-Cr}_2\text{O}_3$ ($1\ 0\ \bar{1}\ 2$): interconversion of oxygenated C_1 surface intermediates M.W. Mensch, C.M. Byrd and D.F. Cox	279
H_2S adsorption on polycrystalline UO_2 Q. Wu, B.V. Yakshinskiy, T. Gouder and T.E. Madey	291
Comparison of the reactivity of high-surface area, monolayer vanadia/ceria catalysts with vanadia/ $\text{CeO}_2(1\ 1\ 1)$ model systems J.M. Vohs, T. Feng and G.S. Wong	303
The reactions of formaldehyde over the surfaces of uranium oxides. A comparative study between polycrystalline and single crystal materials S.D. Senanayake, S.V. Chong and H. Idriss	311
Adsorption and reaction of acrolein on titanium oxide single crystal surfaces: coupling versus condensation A.B. Sherrill, H. Idriss, M.A. Barteau and J.G. Chen	321
Kinetics of catalyzed acid/acid and acid/aldehyde condensation reactions to non-symmetric ketones T.S. Hendren and K.M. Dooley	333
Miscellaneous	353
Previous Issues of Catalysis Today	I