

Contents

| | | |
|---|---|--|
| Part I | Reaction Dynamics and Potential Energy Surfaces | |
| <hr/> | | |
| Reaction Dynamics of H ₂ /Si: A 5-D Model | | |
| By W. Brenig, A. Groß, U. Höfer, P. Kratzer, and R. Russ | | |
| (With 10 Figures) 3 | | |
| Eley-Rideal Dynamics of the Reaction of Gas-Phase H(D) | | |
| with D(H) on Cu(111) | | |
| By B. Jackson and M. Persson (With 4 Figures) 26 | | |
| Dipped Adcluster Model Study of Surface Reactions | | |
| By H. Nakatsuji (With 6 Figures) 36 | | |
| Ab Initio Study on Photo-Induced Desorption of CO and NO | | |
| from Pt(111) | | |
| By H. Aizawa and S. Tsuneyuki (With 2 Figures) 45 | | |
| van der Waals Density Functional for Atoms and Surfaces | | |
| By Y. Andersson, E. Hult, D.C. Langreth, and B.I. Lundqvist | | |
| (With 1 Figure) 52 | | |
| Lifetime of the Intermediate Excited State | | |
| in Laser-Induced Desorption of NO from Pt | | |
| By Y. Murata and K. Fukutani (With 5 Figures) 56 | | |
| Electronic Excitations at Oxide Surfaces | | |
| By H. Kuhlenbeck, M. Bäumer, M. Bender, D. Cappus, B. Dillmann, | | |
| D. Ehrlich, F. Rohr, M. Schönnenbeck, O. Seiferth, and H.-J. Freund | | |
| (With 9 Figures) 65 | | |
| Site Occupation of Adsorbed CO on Ni(100) | | |
| By M. Kawai and J. Yoshinobu (With 3 Figures) 78 | | |
| <hr/> | | |
| Part II | Beam-Surface Scattering and Charge and Energy Transfer | |
| <hr/> | | |
| The Interaction of O ₂ with Ag(111) Probed by Beam Experiments | | |
| By A.W. Kleyne (With 5 Figures) 89 | | |
| On the Molecular Orientation Dependence of Dynamical Processes | | |
| on Solid Surfaces: Dissociative Adsorption and Scattering | | |
| By H. Kasai, A. Okiji, and W.A. Diño (With 6 Figures) 99 | | |

| | |
|--|-----|
| Dynamics and Energy Transfer in Scattering of Xe, O₂ and Cl₂ from Graphite Surface By K. Shobatake, K. Ito, H. Yoshikawa, T. Ogi, H. Ariga, H. Ohashi, and T. Fujimoto (With 7 Figures) | 112 |
| Collision-Induced Desorption of Xe Adsorbed on Pt(111) by Ar Atoms By D. Kulginov, M. Persson, C.T. Rettner, and D.S. Bethune (With 1 Figure) | 122 |
| Spin-Polarized Atomic Beam as a Probe of Spin Correlation at the Topmost Layer of Surfaces By E. Torikai and H. Hori (With 6 Figures) | 126 |
| The Effects of Electronic Excitations on the Behaviour of Particles Scattered by Metal Surfaces By A. Okiji, H. Kasai, and H. Nakanishi (With 2 Figures) | 138 |
| Do the Highly Correlated Kondo and Mixed-Valent States Influence Charge Transfer and Energy Transfer in the Motion of Atoms near Metallic Surfaces? By T. Brunner, D.C. Langreth, P. Nordlander, and H. Shao (With 6 Figures) | 147 |
| Second Order Self-Energy and Interpolation Formula for the Charge Transfer Probability in Time-Dependent Models By K. Makoshi and T. Mii (With 3 Figures) | 157 |
| Surface Reactions Activated by High Electron Temperatures By T.F. Heinz, J.A. Misewich, D.M. News, M. Brandbyge, and P. Hedegård (With 4 Figures) | 165 |
| Density Functional Theory Study of Self-Diffusion on the (111) Surfaces of Ni, Pd, Pt, Cu, Ag and Au By J.J. Mortensen, B. Hammer, O.H. Nielsen, K.W. Jacobsen, and J.K. Nørskov (With 3 Figures) | 173 |
| Surface Resistivity and Related Phenomena on Metal Surfaces By H. Ishida (With 3 Figures) | 183 |

Part III New Methods and Structures

| | |
|---|-----|
| Use of Renormalized Radiation Green's Function in Microscopic Nonlocal Optical Response Theory: Applications to Surface Optical Problems By K. Cho and J. Ushida (With 2 Figures) | 193 |
| Theory for Nonlinear Magneto-Optics at Thin Films By T.A. Luce, U. Pustogowa, W. Hübner, and K.H. Bennemann (With 5 Figures) | 201 |

| | |
|---|-----|
| Size Dependent CO Dissociation on Rh Particles Supported on Thin Alumina Films By J. Libuda, M. Frank, A. Sandell, S. Andersson, P.A. Brühwiler, M. Bäumer, N. Mårtensson, and H.-J. Freund (With 3 Figures) | 210 |
| Effects of Alloying with Ge on the Pt Electronic Structure and Molecular Adsorption By K. Fukutani, T.T. Magkoev, Y. Murata, and K. Terakura (With 4 Figures) | 217 |
| Novel Structure Model for the Type C Defect on Si(001) Surface By T. Uda (With 3 Figures) | 225 |
| Adsorbed PF ₃ on Ru(001) – Quantum Gear Problem? By K. Kakitani, H. Kaji, and A. Yoshimori (With 3 Figures) | 231 |
| Brief Summary By W. Brenig | 239 |
| Index of Contributors | 243 |