

# Recent Papers by IBM Authors

Reprints of the papers listed here may usually be obtained by writing directly to the authors. The authors' IBM divisions or groups are identified as follows: CHQ is Corporate Headquarters; CPD, Communication Products Division; DSD, Data Systems Division; FED, Field Engineering Division; FSD, Federal Systems Division; GPD, General Products Division; GSD, General Systems Division; GTD, General Technology Division; IPD, Information Products Division; ISG, Information Systems Group; IS&CG, Information Systems & Communications Group; IS&TG, Information Systems & Technology Group; NAD, National Accounts Division; NMD, National Marketing Division; RES, Research Division; SPD, System Products Division; and SRI, Systems Research Institute.

- Papers are listed alphabetically by authors.

## A

G. Aeppli (Bell Laboratories, Murray Hill, NJ) and R. Bruinsma (RES Yorktown Hts., NY), **Linear Response Theory and the One-Dimensional Ising Ferromagnet in a Random Field**, *Physics Letters A* **97**, No. 3, 117-120 (1983).

I. Antipov (GTD East Fishkill, NY), **Bipolar Transistor With Minimized Collector-to-Base Junction Area**, *IEEE Transactions on Electron Devices* **ED-30**, No. 6, 723-726 (1983).

L. Ashley and S. L. Levine (IBM Instruments, Danbury, CT), **Rapid-Scan Pulse Voltammetry**, *Talanta* **30**, No. 7, 515-518 (1983).

C. Ayache (Serv. Basses Temp., Grenoble, France) and J. B. Torrance (RES San Jose, CA), **Multiple Specific Heat Anomalies at the Neutral-ionic Phase Transition in TTF-Chloranil**, *Solid State Communications* **47**, No. 10, 789-793 (1983).

M. Y. Azbel (RES Yorktown Hts., NY), **Localization and Dimensionality**, *Solid State Communications* **47**, No. 9, 699-701 (1983).

M. Y. Azbel (RES Yorktown Hts., NY) and M. Rubinstein (Harvard University, Cambridge, MA), **Phase Correlations in One-Dimensional Disordered Systems**, *Physical Review Letters* **51**, No. 9, 836-839 (1983).

## B

J. E. E. Baglin, R. T. Hodgson (RES Yorktown Hts., NY), J. M. Neri, and R. Fastow (Cornell University, Ithaca, NY), **Test for nonthermal transient annealing in silicon**, *Applied Physics Letters* **43**, No. 3, 299-301 (1983).

A. Baratoff, G. Binnig, and H. Rohrer (RES Zurich, Switzerland), **Scanning tunneling microscopy of semiconductor surfaces**, *Journal of Vacuum Science and Technology B* **1**, No. 3, 703-704 (1983).

I. P. Batra (RES San Jose, CA), **Electronic structure of metal semiconductor interfaces**, *Journal of Vacuum Science and Technology B* **1**, No. 3, 558-563 (1983).

C. W. Bauschlicher (NASA Ames Research Center, Moffett Field, CA), P. S. Bagus (RES San Jose, CA), and C. J. Nelin (Polyatomics Research Institute, Mountain View, CA), **Charging and Hybridization in the Finite Cluster Model**, *Chemical Physics Letters* **98**, No. 5, 439-443 (1983).

C. Beeri (The Hebrew University of Jerusalem, Israel), R. Fagin (RES San Jose, CA), D. Maier (State University of New York, Stony Brook), and M. Yannakakis (Bell Laboratories, Murray Hill, NJ), **On the Desirability of Acyclic Database Schemes**, *Journal of the Association for Computing Machinery* **30**, No. 3, 479-513 (1983).

A. E. Bell (RES San Jose, CA), **Critical Issues in High-Density Magnetic and Optical Data Storage: Part 1**, *Laser Focus* **19**, No. 8, 61-66 (1983).

P. Bennema (University of Nijmegen, The Netherlands), E. A. Giess, and J. W. Weidenborner (RES Yorktown Hts., NY), **Morphology of Garnets and Structure of F Slices Determined From a PBC Analysis**, *Journal of Crystal Growth* **62**, No. 1, 41-60 (1983).

G. Binnig and H. Rohrer (RES Zurich, Switzerland), **Scanning Tunnel Microscopy**, *Helvetica Physica Acta* **56**, Nos. 1-3, 481-482 (1983).

G. Binnig and H. Rohrer (RES Zurich, Switzerland), **Surface imaging by scanning tunneling microscopy**, *Ultramicroscopy* **11**, Nos. 2-3, 157-160 (1983).

S. L. Bloom (Stevens Institute of Technology, Hoboken, NJ) and J. B. Wright (RES Yorktown Hts., NY), **P-Varieties—A Signature Independent Characterization of Varieties of Ordered Algebras**, *Journal of Pure and Applied Algebra* **29**, No. 1, 13-58 (1983).

N. Braslau (RES Yorktown Hts., NY), **Ohmic contacts to GaAs and Ga<sub>x</sub>Al<sub>1-x</sub>As**, *Journal of Vacuum Science and Technology B* **1**, No. 3, 700-701 (1983).

M. Brunner (RES Yorktown Hts., NY), **Simulation of backscattered electrons by reflection of primary electrons applied to optimization of detector designs**, *Applied Physics Letters* **43**, No. 4, 391-393 (1983).

G. Burns, F. H. Dacol, and R. L. Melcher (RES Yorktown Hts., NY), **Pyroelectric measurements of (1-reflectivity) in the visible for metallic films**, *Journal of Applied Physics* **54**, No. 7, 4228-4229 (1983).

M. Büttiker, E. P. Harris, and R. Landauer (RES Yorktown Hts., NY), **Thermal activation in extremely underdamped Josephson-junction circuits**, *Physical Review B* **28**, No. 3, 1268-1275 (1983).

M. Büttiker, Y. Imry, and R. Landauer (RES Yorktown Hts., NY), **Josephson Behavior in Small Normal One-Dimensional Rings**, *Physics Letters A* **96**, No. 7, 365-367 (1983).

## C

T. Calderon (Universidad de Sevilla, Huelva, Spain), M. Aguilar (RES Zurich, Switzerland), and R. Coy-Yll (Universidad Complutense, Madrid, Spain), **Relationship Between Blue Color and Radiation Damage in Calcite**, *Radiation Effects Letters* **76**, No. 5, 187-191 (1983).

D. Chin (Stanford University, CA), S.-Y. Oh (ICL Hewlett-Packard Co., Palo Alto, CA), S.-M. Hu (GTD East Fishkill, NY), R. W. Dutton (Stanford University, CA), and J. L. Moll (ICL Hewlett-Packard Co.,

Palo Alto, CA), **Two-Dimensional Oxidation**, *IEEE Transactions on Electron Devices* **ED-30**, No. 7, 744-749 (1983).

D. M. Choy (RES San Jose, CA) and C. K. Wong (RES Yorktown Hts., NY), **Construction of Optimal  $\alpha$ - $\beta$  Leaf Trees with Applications to Prefix Code and Information Retrieval**, *SIAM Journal on Computing* **12**, No. 3, 426-446 (1983).

C. T. Chuang (RES Yorktown Hts., NY), **On the Minority Charge Storage for an Epitaxial Schottky-Barrier Diode**, *IEEE Transactions on Electron Devices* **ED-30**, No. 6, 700-705 (1983).

S. Ciraci (Institut für Grenzflächenforschung und Vakuumphysik, Jülich, Federal Republic of Germany) and I. P. Batra (RES San Jose, CA), **Electronic structure of  $\alpha$ -alumina and its defect states**, *Physical Review B* **28**, No. 2, 982-992 (1983).

E. Clementi and P. Habitz (IS&TG Poughkeepsie, NY), **A New Two-Body Water—Water Potential**, *Journal of Physical Chemistry* **87**, No. 15, 2815-2820 (1983).

P. M. Cotrait, J. Gaultier, C. Polycrape (University of Bordeaux, Talence, France), A. M. Giroud (CENG, Grenoble, France), and U. T. Mueller-Westerhoff (RES San Jose, CA), **Structure d'un Complexe de Métal de Transition Smectique: Le Bis[(octyl-4 phényl)-1 éthylène-dithiolato-1,2](2-)-S,S'] Nickel,  $C_{32}H_{44}NiS_4$** , Structure of a Smectic Transition-Metal Complex: Bis[(Octyl-4 phenyl)-1 ethylenedithiolato-1,2](2-)-S,S' Nickel,  $C_{32}H_{44}NiS_4$ , *Acta Crystallographica* **C39**, Part 7, 833-835 (1983).

E. Courtens (RES Zurich, Switzerland), **Low-Frequency Dielectric Loss of Triglycine Sulfate**, *Physical Review Letters* **51**, No. 9, 844 (1983).

E. Courtens (RES Zurich, Switzerland), **Structural glasses and  $Rb_{1-x}(NH_4)_xH_2PO_4$** , *Helvetica Physica Acta* **56**, Nos. 1-3, 705-720 (1983).

A. Cros, R. A. Pollak, and K. N. Tu (RES Yorktown Hts., NY), **Oxidation Behavior of Pd-Si Compounds**, *Thin Solid Films* **104**, No. 1/2, 221-225 (1983).

## D

F. M. d'Heurle (RES Yorktown Hts., NY), **Thermal Formation of  $SiO_2$  Films Over  $NiSi$ ,  $NiSi_2$  and  $CoSi_2$  via Silicide Decomposition**, *Thin Solid Films* **105**, No. 3, 285-292 (1983).

M. D'Iorio, U. Glaus, and E. Stoll (RES Zurich, Switzerland), **Transverse Spin Dynamics of a One-Dimensional XY System: A Fit to Spin-Spin Relaxation Data**, *Solid State Communications* **47**, No. 5, 313-315 (1983).

W. A. Dahmen (Universität Bielefeld, Federal Republic of Germany) and C. A. Micchelli (RES Yorktown Hts., NY), **On the Linear Independence of Multivariate B-Splines. II: Complete Configurations**, *Mathematics of Computation* **41**, No. 163, 143-163 (1983).

W. Dahmen (Universität Bielefeld, Federal Republic of Germany) and C. A. Micchelli (RES Yorktown Hts., NY), **Translates of Multivariate Splines**, *Linear Algebra and Its Applications* **52/3**, 217-234 (1983).

P. De Souza (RES Yorktown Hts., NY), **A Statistical Approach to the Design of an Adaptive Self-Normalizing Silence Detector**, *IEEE Transactions on Acoustics, Speech, and Signal Processing* **ASSP-31**, No. 3, 678-684 (1983).

## F

R. Fagin (RES San Jose, CA), **Degrees of Acyclicity for Hypergraphs and Relational Database Schemes**, *Journal of the Association for Computing Machinery* **30**, No. 3, 514-550 (1983).

Th. Fauster, F. J. Himpsel (RES Yorktown Hts., NY), J. E. Fischer, and E. W. Plummer (University of Pennsylvania, Philadelphia), **Three-Dimensional Energy Band in Graphite and Lithium-Intercalated Graphite**, *Physical Review Letters* **51**, No. 5, 430-433 (1983).

W. W. Fleming and S. A. MacDonald (RES San Jose, CA), **Quantitative Analysis of a Mixture of *tert*-Butyl Hydroperoxide, *tert*-Butyl Peroxide, and *tert*-Butyl Alcohol by Carbon-13 Nuclear Magnetic Resonance Spectrometry**, *Analytical Chemistry* **55**, No. 9, 1625-1626 (1983).

J. M. J. Fréchet, E. Eichler (University of Ottawa, Canada), H. Ito, and C. G. Willson (RES San Jose, CA), **Poly(*p*-*tert*-butoxycarbonyloxystyrene): a convenient precursor to *p*-hydroxystyrene resins**, *Polymer* **24**, No. 8, 995-1000 (1983).

## G

N. Garcia, J. A. Barker, and I. P. Batra (RES San Jose, CA), **Helium Scattering from Metal Surfaces: Potential Determination and Crystallography**, *Solid State Communications* **47**, No. 6, 485-488 (1983).

E. M. Genies, G. Bidan (L.A.C.N.R.S., Grenoble, France), and A. F. Diaz (RES San Jose, CA), **Spectroelectrochemical Study of Polypyrrole Films**, *Journal of Electroanalytical Chemistry and Interfacial Electrochemistry* **149**, No. 1-2, 101-113 (1983).

A. Girlando, F. Marzola, C. Pecile (Institute of Physical Chemistry, Padova, Italy), and J. B. Torrance (RES San Jose, CA), **Vibrational spectroscopy of mixed stack organic semiconductors: Neutral and ionic phases of tetrathiafulvalene-chloranil (TTF-CA) charge transfer complex**, *Journal of Chemical Physics* **79**, No. 2, 1075-1085 (1983).

J.-L. Goffin (McGill University, Montreal, Canada) and A. J. Hoffman (RES Yorktown Hts., NY), **On the Relationship between the Hausdorff Distance and Matrix Distances of Ellipsoids**, *Linear Algebra and Its Applications* **52/3**, 301-313 (1983).

T. N. T. Goodman (The University, Dundee, Scotland) and C. A. Micchelli (RES Yorktown Hts., NY), **Limits of Spline Functions with Periodic Knots**, *Journal of the London Mathematical Society* **28**, Part 1, 103-112 (1983).

I. S. Gopal, M. A. Bonuccelli, and C. K. Wong (RES Yorktown Hts., NY), **Scheduling in Multibeam Satellites with Interfering Zones**, *IEEE Transactions on Communications* **COM-31**, No. 8, 941-951 (1983).

M. Grunze, P. A. Dowben (Fritz-Haber-Institut der Max-Planck-Gesellschaft, Federal Republic of Germany), and C. R. Brundle (RES San Jose, CA), **Ammonia Cluster Formation and  $NH_3$  Decomposition on a Ni(100) Surface**, *Surface Science* **128**, Nos. 2/3, 311-324 (1983).

G. Güntherodt, J. L. Freeouf, and F. Holtzberg (RES Yorktown Hts., NY), **Dielectric Function of SmS I. Optical Transitions**, *Solid State Communications* **47**, No. 9, 677-680 (1983).

## H

R. A. Hango (GTD Essex Junction, VT), **Deionized Water System**, *Solid State Technology* **26**, No. 7, 107-111 (1983).

H. Hayashi and P. J. Flory (RES San Jose, CA), **Configuration of the Polyisobutylene Chain in Bulk and in Solution According to Elastic Neutron Scattering**, *Physica B&C* **120**, Nos. 1-3, 408-412 (1983).

H. Hayashi, P. J. Flory (RES San Jose, CA), and G. D. Wignall (Oak Ridge National Laboratory, TN), **Configuration of the Polyisobutylene Chain according to Neutron and X-ray Scattering**, *Macromolecules* **16**, No. 8, 1328-1335 (1983).

D. Henderson (RES San Jose, CA), L. Blum (University of Puerto Rico, Rio Piedras), and M. Lozada-Cassou (Universidad Autónoma Metropolitana/Iztapalapa, México, México), **The Statistical Mechanics of the Electric Double Layer**, *Journal of Electroanalytical Chemistry and Interfacial Electrochemistry* **150**, No. 1-2, 291-303 (1983).

D. Henderson (RES San Jose, CA) and I. K. Snook (Royal Melbourne Institute of Technology, Australia), **Adsorption of Gases and Vapors on a Solid Surface**, *Journal of Physical Chemistry* **87**, No. 15, 2956-2959 (1983).

S. R. Herd, K. Y. Ahn, and K. N. Tu (RES Yorktown Hts., NY), **Formation and Crystallization of Amorphous Silicides at the Interface Between Thin Metal and Amorphous Silicon Films**, *Thin Solid Films* **104**, No. 1/2, 197-206 (1983).

K. Hermann and P. S. Bagus (RES San Jose, CA), **New mechanism for screening in core-level photoemission of adsorbates: Model studies**, *Physical Review B* **28**, No. 2, 560-567 (1983).

K. Hermann and P. S. Bagus (RES San Jose, CA), **Rydberg Screening in Core Level Photoemission of Ammonia Adsorbed on Nickel Surfaces**, *Physica Scripta* **T4**, 113-114 (1983).

F. J. Himpsel (RES Yorktown Hts., NY) and B. Reihl (RES Zurich, Switzerland), **Experimental energy bands of a rare-earth metal: Gd(0001)**, *Physical Review B* **28**, No. 2, 574-578 (1983).

C. M. Hsieh, P. C. Murley, and R. R. O'Brien (GTD East Fishkill, NY), **Collection of Charge From Alpha-Particle Tracks in Silicon Devices**, *IEEE Transactions on Electron Devices* **ED-30**, No. 6, 686-693 (1983).

S. M. Hu (GTD East Fishkill, NY), **Kinetics of interstitial supersaturation during oxidation of silicon**, *Applied Physics Letters* **43**, No. 5, 449-451 (1983).

H.-C. W. Huang (GTD East Fishkill, NY) and R. G. Schad (RES Yorktown Hts., NY), **Interdiffusion-induced surface morphology in lead-alloy Josephson tunnel junction electrodes**, *Journal of Applied Physics* **54**, No. 7, 3878-3885 (1983).

## I

P. A. Irvine, B. Erman, and P. J. Flory (RES San Jose, CA), **Optical Anisotropies of Aromatic Esters and of Oligomers of Poly(*p*-oxybenzoate)**, *Journal of Physical Chemistry* **87**, No. 15, 2929-2935 (1983).

## J

D. J. Jackson, J. J. Wynne, and P. H. Kes (RES Yorktown Hts., NY), **Resonance-enhanced multiphoton ionization: Interference effects due to harmonic generation**, *Physical Review A* **28**, No. 2, 781-794 (1983).

K. C. Janda (California Institute of Technology, Pasadena), J. E. Hurst, J. Cowin, L. Wharton (University of Chicago, IL), and D. J. Auerbach (RES San Jose, CA), **Direct-Inelastic and Trapping-Desorption Scattering of N<sub>2</sub> and CH<sub>4</sub> from Pt(111)**, *Surface Science* **130**, No. 2, 395-409 (1983).

J. Jimenez (IBM Spain, Madrid Scientific Center), **A spanwise structure in the plane shear layer**, *Journal of Fluid Mechanics* **132**, 319-333 (1983).

V. B. Jipson (RES Yorktown Hts., NY) and C. C. Williams (Stanford University, CA), **Two-dimensional modeling of an optical disk readout**, *Applied Optics* **22**, No. 14, 2202-2209 (1983).

## K

J. K. Klitz (IPD Boulder, CO), **Simulation of an Automated Logistics and Manufacturing System**, *European Journal of Operational Research* **14**, No. 1, 36-39 (1983).

S.-W. Ko, A. C. Ling (San Jose State University, CA), R. J. Waltman, and J. Bargon (RES San Jose, CA), **ESR Studies of Radicals Derived from Tetrahydrofuran Derivatives**, *Journal of Magnetic Resonance* **54**, No. 1, 67-77 (1983).

S. W. Koch and F. F. Abraham (RES San Jose, CA), **Molecular Dynamics Simulations of Phase Transitions in Physisorbed Nobel Gases**, *Helvetica Physica Acta* **56**, Nos. 1-3, 755-764 (1983).

L. Krusin-Elbaum, M. Wittmer, C.-Y. Ting, and J. J. Cuomo (RES Yorktown Hts., NY), **ZrN Diffusion Barrier in Aluminum Metallization Schemes**, *Thin Solid Films* **104**, No. 1/2, 81-87 (1983).

T. S. Kuan and C.-A. Chang (RES Yorktown Hts., NY), **Electron microscope studies of a Ge-GaAs superlattice grown by molecular beam epitaxy**, *Journal of Applied Physics* **54**, No. 8, 4408-4413 (1983).

J. Kubler (Institut für Festkörperphysik, Darmstadt, Federal Republic of Germany), A. R. Williams (RES Yorktown Hts., NY), and C. B. Sommers (Laboratoire de Physique des Solides, Orsay, France), **Formation and coupling of magnetic moments in Heusler alloys**, *Physical Review B* **28**, No. 4, 1745-1755 (1983).

## L

S. K.-C. Lai, D. J. DiMaria, and F. F. Fang (RES Yorktown Hts., NY), **Silicon-Rich SiO<sub>2</sub> and Thermal SiO<sub>2</sub> Dual Dielectric for Yield Improvement and High Capacitance**, *IEEE Transactions on Electron Devices* **ED-30**, No. 8, 894-897 (1983).

R. Landauer (RES Yorktown Hts., NY), **Stability and relative stability in nonlinear driven systems**, *Helvetica Physica Acta* **56**, Nos. 1-3, 847-861 (1983).

S. L. Lee (University of Malaysia, Penang), C. A. Micchelli (RES Yorktown Hts., NY), A. Sharma (University of Alberta, Edmonton, Canada), and P. W. Smith (Old Dominion University, Norfolk, Virginia), **Some properties of periodic B-spline collocation matrices**, *Proceedings of the Royal Society of Edinburgh A* **94**, Parts 3/4, 235-246 (1983).

B. H. Lengsfeld III, A. D. McLean, M. Yoshimine, and B. Liu (RES San Jose, CA), **The binding energy of the ground state of Be<sub>2</sub>**, *Journal of Chemical Physics* **79**, No. 4, 1891-1895 (1983).

M. D. Levenson (RES San Jose, CA), **Photolithography experiments using forced Rayleigh scattering**, *Journal of Applied Physics* **54**, No. 8, 4305-4313 (1983).

J. S. Lew and D. A. Quarles, Jr. (RES Yorktown Hts., NY), **Nonnegative Solutions of a Nonlinear Recurrence**, *Journal of Approximation Theory* **38**, No. 4, 357-379 (1983).

M. Lozada-Cassou (Universidad Autónoma Metropolitana/Iztapalapa, México, México) and D. Henderson (RES San Jose, CA), **Application of the Hypernetted Chain Approximation to the Electrical Double Layer. Comparison with Monte Carlo Results for 2:1 and 1:2 Salts**, *Journal of Physical Chemistry* **87**, No. 15, 2821-2824 (1983).

R. Ludeke (RES Yorktown Hts., NY), T.-C. Chiang, and T. Miller (University of Illinois, Urbana), **Schottky barrier formation of Ag on GaAs(110)**, *Journal of Vacuum Science and Technology B* **1**, No. 3, 581-587 (1983).

## M

R. M. Macfarlane, R. T. Harley, and R. M. Shelby (RES San Jose, CA), **High Resolution Laser Spectroscopy of Colour-Centres**, *Radiation Effects* **72**, Nos. 1-4, 1-11 (1983).

A. P. Malozemoff (RES Yorktown Hts., NY), **Laws of Approach to Magnetic Saturation for Interacting and Isolated Spherical and Cylindrical Defects in Isotropic Magnetostrictive Media**, *IEEE Transactions on Magnetics* **MAG-19**, No. 4, 1520-1523 (1983).

H. M. Markowitz (RES Yorktown Hts., NY), **Nonnegative or Not Nonnegative: A Question About CAPMS**, *Journal of Finance* **38**, No. 2, 283-295 (1983).

A. D. McLean and Y. Ellinger (RES San Jose, CA), **Correlation Effects on Cis-Trans Energy Differences in Open-Shell Systems: The HOCO Radical as an Example**, *Chemical Physics Letters* **98**, No. 5, 450-453 (1983).

E. E. Mendez, M. Heiblum (RES Yorktown Hts., NY), R. Fisher, J. Klem, R. E. Thorne, and H. Morkoç (University of Illinois, Urbana), **Photoluminescence study of the incorporation of silicon in GaAs grown by molecular beam epitaxy**, *Journal of Applied Physics* **54**, No. 7, 4202-4204 (1983).

## N

B. Nikolaus and D. Grischkowsky (RES Yorktown Hts., NY), **90-fs tunable optical pulses obtained by two-stage pulse compression**, *Applied Physics Letters* **43**, No. 3, 228-230 (1983).

## O

P. Oelhafen, J. L. Freeouf, T. S. Kuan, T. N. Jackson, and P. E. Batson (RES Yorktown Hts., NY), **Palladium on GaAs: A reactive interface**, *Journal of Vacuum Science and Technology B* **1**, No. 3, 588-592 (1983).

P. Oelhafen, J. L. Freeouf, G. D. Pettit, and J. M. Woodall (RES Yorktown Hts., NY), **Elevated temperature low energy ion cleaning of GaAs**, *Journal of Vacuum Science and Technology B* **1**, No. 3, 787-790 (1983).

I. Ohdomari, M. Hori, T. Maeda, A. Ogura, H. Kawarada, T. Hamamoto, K. Sano (Waseda University, Tokyo, Japan), K. N. Tu, M. Wittmer (RES Yorktown Hts., NY), I. Kimura, and K. Yoneda (Kyoto University, Osaka, Japan), **Reduction of contact resistivity by As redistribution during Pd<sub>2</sub>Si formation**, *Journal of Applied Physics* **54**, No. 8, 4679-4682 (1983).

G. Ottaviani, K. N. Tu, R. D. Thompson (RES Yorktown Hts., NY), J. W. Mayer (Cornell University, Ithaca, NY), and S. S. Lau (University of California at San Diego, La Jolla), **Interaction of Pd-Er alloys with silicon**, *Journal of Applied Physics* **54**, No. 8, 4614-4622 (1983).

## P

J. Pacansky and A. Gutierrez (RES San Jose, CA), **Infrared Spectra of the *n*-Butyl and *n*-Pentyl Radicals**, *Journal of Physical Chemistry* **87**, No. 16, 3074-3079 (1983).

H. Partridge (University of Southern California, Los Angeles), C. W. Bauschlicher (NASA Ames Research Center, Moffett Field, CA), S. P. Walsh (Polyatomics Research Institute, Mountain View, CA), and B. Liu (RES San Jose, CA), **An *ab initio* study of core-valence correlation**, *Journal of Chemical Physics* **79**, No. 4, 1866-1873 (1983).

W. Paul (RES San Jose, CA), **On-Line Simulation of *k* + 1 Tapes by *k* Tapes Requires Nonlinear Time**, *Information and Control* **53**, Nos. 1-2, 1-8 (1982).

M. R. Philpott, F. Barz, J. G. Gordon II, and M. J. Weaver (RES San Jose, CA), **Time Dependence of Surface Enhanced Raman Scattering During and After Oxidation-Reduction Cycles**, *Journal of Electroanalytical Chemistry and Interfacial Electrochemistry* **150**, No. 1-2, 399-414 (1983).

R. M. Potemski and M. B. Small (RES Yorktown Hts., NY), **Contact Angles Between (GaAl)As Solid and Solutions**, *Journal of Crystal Growth* **62**, No. 2, 317-319 (1983).

## R

J. F. Rabolt (RES San Jose, CA), **Characterization of Lattice Disorder in the Low-Temperature Phase of Irradiated PTFE by Vibrational Spectroscopy**, *Journal of Polymer Science, Polymer Physics* **21**, No. 9, 1797-1805 (1983).

D. L. Rath (RES Yorktown Hts., NY), **Studies of Electrode Resistance in the Electrochemical Cell**, *Journal of Electroanalytical Chemistry and Interfacial Electrochemistry* **150**, No. 1-2, 521-534 (1983).

W. A. Rausch, R. F. Lever, and R. H. Kastl (GTD East Fishkill, NY), **Diffusion of boron into polycrystalline silicon from a single crystal source**, *Journal of Applied Physics* **54**, No. 8, 4405-4407 (1983).

B. Reihl (RES Zurich, Switzerland), G. Hollinger, and F. J. Himpsel (RES Yorktown Hts., NY), **Itinerant-5f-electron antiferromagnetism in uranium nitride: A temperature-dependent angle-resolved photoemission study**, *Physical Review B* **28**, No. 3, 1490-1494 (1983).

K. H. Rieder (RES Zurich, Switzerland), **A He-Diffraction Investigation of the  $p(2 \times 2)$  and  $c(2 \times 2)$  Phases of Oxygen on Ni(100)**, *Surface Science* **128**, Nos. 2/3, 325-333 (1983).

K. H. Rieder and W. Stocker (RES Zurich, Switzerland), **The He/Pd(110) interaction potential**, *Journal of Physics C* **16**, No. 22, L783-L788 (1983).

D. J. Robbins, D. J. DiMaria, C. Falcony, and D. W. Dong (RES Yorktown Hts., NY), **A study of the electrical and luminescence characteristics of a novel Si-based thin film electroluminescent device**, *Journal of Applied Physics* **54**, No. 8, 4553-4569 (1983).

S. M. Roberts (IBM Scientific Center, Palo Alto, CA), **Boundary Conditions of the Second-Order Differential Equation and the Riccati Equation**, *Journal of Optimization Theory and Applications* **40**, No. 3, 397-403 (1983).

R. R. Root and K. M. Ragsdell (DSD Poughkeepsie, NY), **The Circuit Breaker: A Practical Example in Engineering Optimization**, *Mechanism and Machine Theory* **18**, No. 3, 229-235 (1983).

B. J. Rubin (GTD East Fishkill, NY) and H. L. Bertoni (Polytechnic Institute of New York, Brooklyn), **Waves Guided by Conductive Strips Above a Periodically Perforated Ground Plane**, *IEEE Transactions on Microwave Theory and Techniques* **MTT-31**, No. 7, 541-549 (1983).

T. P. Russell, H. Gugger, and J. D. Swalen (RES San Jose, CA), **In-Plane Orientation of Polyimide**, *Journal of Polymer Science, Polymer Physics* **21**, No. 9, 1745-1756 (1983).

## S

H. J. Scheel (RES Zurich, Switzerland) and J. Sommerauer (Institute of Crystallography and Petrography ETH, Zurich, Switzerland), **Crystal Growth and Characterization of "Striation-Free"  $\text{KTa}_{1-x}\text{Nb}_x\text{O}_3$  ( $x \approx 0.26$ ) Solid Solutions**, *Journal of Crystal Growth* **62**, No. 2, 291-298 (1983).

W. H. Schubert (RES Yorktown Hts., NY) and J. J. Hack (Colorado State University, Ft. Collins), **Transformed Eliassen Balanced Vortex Model**, *Journal of the Atmospheric Sciences* **40**, No. 6, 1571-1583 (1983).

J. C. Scott, P. Pfluger, M. T. Krounbi, and G. B. Street (RES San Jose, CA), **Electro-spin-resonance studies of pyrrole polymers: Evidence for bipolarons**, *Physical Review B* **28**, No. 4, 2140-2145 (1983).

M. Seel and P. S. Bagus (RES San Jose, CA), **Ab initio cluster study of the interaction of fluorine and chlorine with the Si(111) surface**, *Physical Review B* **28**, No. 4, 2023-2038 (1983).

H. Seki (RES San Jose, CA), **SERS Excitation Profile of Pyridine and CO on Silver in UHV**, *Journal of Electroanalytical Chemistry and Interfacial Electrochemistry* **150**, No. 1-2, 425-436 (1983).

R. Srinivasan, V. B. Jipson, and M. J. Poirier (RES Yorktown Hts., NY), **Nature of Group Ib Metal Films Deposited on Polymer Surfaces**

**Photooxidized with Far-Ultraviolet (185 nm) Radiation**, *Surface Science* **130**, No. 2, L344-L348 (1983).

P. J. Steinhardt (RES Yorktown Hts., NY), D. R. Nelson (Harvard University, Cambridge, MA), and M. Ronchetti (RES Yorktown Hts., NY), **Bond-orientational order in liquids and glasses**, *Physical Review B* **28**, No. 2, 784-805 (1983).

U. W. Suter, E. Saiz, and P. J. Flory (RES San Jose, CA), **Conformational Characteristics of Polyisobutylene**, *Macromolecules* **16**, No. 8, 1317-1328 (1983).

## T

T. Takamori, D. B. Dove (RES Yorktown Hts., NY), and C. L. Huffine (SPD Rochester, MN), **Phase Transitions and Thermoluminescence of a Plasma-Sprayed Zinc Silicate Phosphor**, *Journal of the American Ceramic Society* **66**, No. 8, C127-C129 (1983).

A. C. Tam and B. Sullivan (RES San Jose, CA), **Remote sensing applications of pulsed photothermal radiometry**, *Applied Physics Letters* **43**, No. 4, 333-335 (1983).

A. Tani and D. Henderson (RES San Jose, CA), **A cluster theory for electrolytes**, *Journal of Chemical Physics* **79**, No. 5, 2390-2394 (1983).

D. M. Taub (IBM United Kingdom Laboratories, Winchester, England), **Limitations of Looped-Line Scheme for Overcoming Wired-or Glitch Effects**, *Electronics Letters* **19**, No. 15, 579-580 (1983).

R. H. Taylor and D. D. Grossman (RES Yorktown Hts., NY), **An Integrated Robot System Architecture**, *Proceedings of the IEEE* **71**, No. 7, 842-856 (1983).

C. D. Tesche, C. C. Chi, C. C. Tsuei, and P. Chaudhari (RES Yorktown Hts., NY), **Inductive monopole detector employing planar high order superconducting gradiometer coils**, *Applied Physics Letters* **43**, No. 4, 384-386 (1983).

M. Tomozawa (Rensselaer Polytechnic Institute, Troy, NY), M. Takata (Technological University of Nagaoka, Japan), J. Acocella, E. B. Watson (Rensselaer Polytechnic Institute, Troy, NY), and T. Takamori (RES Yorktown Hts., NY), **Thermal Properties of  $\text{Na}_2\text{O} \cdot 3\text{SiO}_2$  Glasses with High Water Content**, *Journal of Non-Crystalline Solids* **56**, Nos. 1-3, 343-348 (1983).

## V

F. Vericat, L. Blum (University of Puerto Rico, Rio Piedras), and D. Henderson (RES San Jose, CA), **Nonprimitive Electrolyte Near a Charged Wall: Generalized Mean Spherical Approximation**, *Journal of Electroanalytical Chemistry and Interfacial Electrochemistry* **150**, No. 1-2, 315-324 (1983).

W. Volksen, J. R. Lyerla, Jr., J. Economy, and B. Dawson (RES San Jose, CA), **Liquid-Crystalline Copolyesters Based on Poly(*p*-Oxybenzoate) and Poly(*p*-Biphenylene Terephthalate)**, *Journal of Polymer Science, Polymer Chemistry* **21**, No. 8, 2249-2259 (1983).

S. Vonholnar, A. Briggs, J. Flouquet, and G. Remenyi (RES Yorktown Hts., NY), **Electron Localization in a Magnetic Semiconductor:  $\text{Gd}_{3-x}\text{S}_4$** , *Physical Review Letters* **51**, No. 8, 706-709 (1983).

## W

R. A. Webb, R. F. Voss, G. Grinstein, and P. M. Horn (RES Yorktown Hts., NY), **Magnetic Field Behavior of a Josephson-Junction Array: Two-Dimensional Flux Transport on a Periodic Substrate**, *Physical Review Letters* **51**, No. 8, 690-693 (1983).

S. Winkler (CHQ White Plains, NY), **The Quiet Revolution Revisited**, *Computer Networks* **7**, No. 3, 169-172 (1983).

M. Wittmer, C.-Y. Ting, and K. N. Tu (RES Yorktown Hts., NY), **Atomic Motion of Dopant During Interfacial Silicide Formation**, *Thin Solid Films* **104**, No. 1/2, 191-195 (1983).

J. M. Woodall, P. Oelhafen, T. N. Jackson, J. L. Freeouf, and G. D. Pettit (RES Yorktown Hts., NY), **Photoelectrochemical passivation of GaAs surfaces**, *Journal of Vacuum Science and Technology B* **1**, No. 3, 795-798 (1983).

## Y

K. H. Yang (RES Yorktown Hts., NY), **Freedericksz transition of twisted nematic cells**, *Applied Physics Letters* **43**, No. 2, 171-173 (1983).

W. S. Yang (Peking University, Beijing, China), F. Jona (State University of New York, Stony Brook), and P. M. Marcus (RES Yorktown Hts., NY), **Application of orthogonal experimental design to LEED crystallography**, *Journal of Vacuum Science and Technology B* **1**, No. 3, 718-722 (1983).

## Z

A. Ziv (IBM Israel, Haifa Scientific Center), **A Stable Method for the Evaluation of a Polynomial and of a Rational Function of One Variable**, *Numerische Mathematik* **41**, No. 3, 309-319 (1983).