

Recent Papers by IBM Authors

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• Journals

Methodes Iteratives, de Convergence Lineaire, pour Resoudre des Problemes de Programmation et d'Approximation Lineaires (Iterative Methods, Having Linear Speed of Convergence, for Solving Problems of Linear Programming and Linear Approximation) W. Oettli (RES Zürich), *Academie des Sciences, Comptes Rendus Series A*, 272, 680-682 (March 8, 1971).

Markovian Queues with Three Heterogeneous Servers, V. P. Singh (CD E. Fishkill), *AIIE Transactions, Industrial Engineering Research and Development* 3, No. 1, 45-48 (March, 1971).

Intensity and Polarization of the Radiation Emerging from a Plane-parallel Atmosphere Containing Monodispersed Aerosols, J. V. Dave (DPD Scientific Ctr., Palo Alto), *Applied Optics* 9, No. 12, 2673-2684 (December, 1970).

Silicon Nitride as an Anti-reflection Coating for Semiconductor Optics, R. A. Laff (RES Yorktown Hts.), *Applied Optics* 10, No. 4, 968-969 (April, 1971).

Sequential Excitation of Longitudinal Modes in GaAs Lasers, H. Wieder (RES San Jose), *Applied Physics Letters* 18, No. 6, 223-224 (March 15, 1971).

Micromagnetic Solutions for Bubble Domains, Y. S. Lin and Y. O. Tu (RES Yorktown Hts.), *Applied Physics Letters* 18, No. 6, 247-249 (March 15, 1971).

Charge Storage on Small Metal Particles, R. B. Laibowitz and P. J. Stiles (RES Yorktown Hts.), *Applied Physics Letters* 18, No. 7, 267-269 (April 1, 1971).

Study of Failure Mechanisms in Al-Cu Thin Films by High-voltage Electron Microscopy, L. Berenbaum and B. Patnaik (CD E. Fishkill), *Applied Physics Letters* 18, No. 7, 284-286 (April 1, 1971).

Dynamic Behavior of Domain Walls in Low-moment Titanium-Gallium-Iron Garnet Crystals, B. A. Calhoun, E. A. Giess and L. L. Rosier (RES Yorktown Hts.), *Applied Physics Letters* 18, No. 7, 287-289 (April 1, 1971).

X-Ray Diffraction from Piezoelectrically Amplified Shear Waves in the 50 GHz Range, D. G. Carlson, A. Segmüller, E. Mosekilde, H. Cole and J. A. Armstrong (RES Yorktown Hts.), *Applied Physics Letters* 18, No. 8, 330-332 (April 15, 1971).

Plasma Diagnostics of an rf Sputtering Glow Discharge, J. W. Coburn and E. Kay (RES San Jose), *Applied Physics Letters* 18, No. 10, 435-438 (May 15, 1971).

An Improved Semi-quantitative Spectrochemical Method, T. S. Long (GSD Rochester), *Applied Spectroscopy* 25, No. 1, 37-40 (January/February, 1971).

A Tuned MESFET-Amplifier at 16 GHz, W. Jutzi (RES Zürich), *Archiv der Elektrischen Übertragung* 25, 159-160 (1971).

Check for Porosity Before Passing the Plate, E. W. Neumann (SDD Raleigh), *Circuits Manufacturing* 11, No. 4, 48-49 (April, 1971).

Key-to-address Transform Techniques: A Fundamental Performance Study on Large Existing Formatted Files, V. Y. Lum, P. S. T. Yuen and M. Dodd (RES San Jose), *Communications of the ACM* 4, No. 14, 228-239 (April, 1971).

Corrosion Characteristics of Copper in Fluorochemical Liquid FC-78, L. H. Lee (CD E. Fishkill), *Corrosion* 26, No. 12, 529-532 (December, 1970).

Breaking the Tool Grinding Barrier: Bit by Bit, K. Kausler (SDD Boulder), *Cutting Tool Engineering* 23, No. 1 & 2, 18-19 (January/February, 1971).

A Digital Approach to Work Magnetic Control, M. D. Schettl and K. O. Hesse (GSD Rochester), *Electromechanical Design* 15, No. 3, 10-11 (March, 1971).

Domain Statistics and Ferroelectric Transients, N. W. Dalton, J. T. Jacobs and B. D. Silverman (RES Yorktown Hts.), *Ferroelectrics* 2, 21-29 (1971).

Cooperative Effects, Soft Modes, and Fluctuations in Data Processing, R. Landauer (RES Yorktown Hts.), *Ferroelectrics* 2, 47-55 (1971).

Finishing Key to New IBM Process, C. J. Guenther (GSD Rochester), *Finishing Highlights* 3, No. 4, 607 (January/February, 1971).

The Application of Formal Logic to Programs and Programming, C. D. Allen (IBM United Kingdom Laboratories, Ltd.), *IBM Systems Journal* 10, No. 1, 2-38 (1971).

Fortran Extended-precision Library, H. Kuki (Univ. of Chicago) and J. Ascoly (SDD New York City), *IBM Systems Journal* **10**, No. 1, 39–61, (1971).

Interactive Scheduling System, A. C. Brewer (FSD Gaithersburg), *IBM Systems Journal* **10**, No. 1, 62–79 (1971).

Signal Multiplexing in Surface-wave Delay Lines Using Orthogonal Pairs of Golay's Complementary Sequences, C. -C. Tseng (RES Yorktown Hts.), *IEEE Journal of Sonics and Ultrasonics* **SU-18**, No. 2, 103–107 (April, 1971).

Optical Transmission Utilizing Injection Light Sources, K. L. Konnerth (RES Yorktown Hts.) and B. R. Shah (FSD Gaithersburg), *IEEE Spectrum* **7**, No. 9, 37–46 (September, 1970).

Time Domain Sensitivity Computation for Networks Containing Transmission Lines, C. W. Ho (RES Yorktown Hts.), *IEEE Transactions on Circuit Theory* **CT-18**, No. 1, 114–122 (January, 1971).

Stability of a Class of Nonlinear Networks Containing Uniform LC Transmission Lines, G. Prada (CD E. Fishkill) and T. A. Bickart (Univ. of Syracuse), *IEEE Transactions on Circuit Theory* **CT-18**, No. 2, 309–311 (March, 1971).

State Assignments for Asynchronous Sequential Machines, C. -J. Tan (RES Yorktown Hts.), *IEEE Transactions on Computers* **C-20**, No. 4, 382–391 (April, 1971).

A Computing Machine Based on Tree Structures and the Lambda Calculus, K. Berkling (RES Yorktown Hts.), *IEEE Transactions on Computers* **C-20**, No. 4, 404–418 (April, 1971).

A Heuristic Algorithm for the Diagnosis of Asynchronous Circuits, G. R. Putzolu and J. P. Roth (RES Yorktown Hts.), *IEEE Transactions on Computers* **C-20**, No. 6, 639–647 (June, 1971).

Thermal Breakdown Delay Time in Silicon p-n Junctions, D. J. Fleming (CD E. Fishkill), *IEEE Transactions on Electron Devices* **ED-18**, No. 2, 94–97 (February, 1971).

Noise Behavior of Schottky Barrier Gate Field-effect Transistors at Microwave Frequencies, W. Bachtold (RES Zürich), *IEEE Transactions on Electron Devices* **ED-18**, No. 2, 97–104 (February, 1971).

Static Negative Resistance in Gunn Effect Materials with Field-dependent Carrier Diffusion, P. S. Hauge (RES Yorktown Hts.), *IEEE Transactions on Electron Devices* **ED-18**, No. 6, 390–391 (June, 1971).

Enhanced Harmonic Response of an Interdigital Surface Wave Transducer, L. Kuhn (RES Yorktown Hts.), *IEEE Transactions on Electron Devices* **ED-18**, No. 6, 395 (June, 1971).

An Approach to Computer-aided Translation, E. O. Lippman (RES Yorktown Hts.), *IEEE Transactions on Engineering Writing and Speech* **EWS-14**, No. 1, 10–33 (February, 1971).

On "Note on a Partition for a Decision Feedback Strategy," C. K. Chow (RES Yorktown Hts.), *IEEE Transactions on Information Theory* **IT-7**, No. 2, 210–211 (March, 1971).

Optimal Multiplexing of Sampled Signals on Noisy Channels, B. Dejon (Univ. of Erlangen-Nurnberg, Erlangen, Germany) and E. Hansler (RES Yorktown Hts.), *IEEE Transactions on Information Theory* **IT-17**, No. 3, 257–262 (May, 1971).

Repetitive Signaling Using a Noisy Feedback Channel, S. S. Lavenberg (RES Yorktown Hts.), *IEEE Transactions on Information Theory* **IT-17**, No. 3, 269–278 (May, 1971).

On Obtaining Separating Hyperplanes Via Linear Programming, W. C. Martin (FSD Westlake.), *IEEE Transactions on Systems, Man and Cybernetics* **SMC-1**, No. 1, 87–88 (January, 1971).

A Run-time Mechanism for Referencing Variables, W. Henhagl and C. B. Jones (SDD Vienna), *Information Processing Letters* **1**, No. 1, 14–16 (February, 1971).

The Methods of Adjoints and Complementary Functions in Two-point Boundary Value Problems, S. M. Roberts (DPD Houston) and J. S. Shipman (FSD Gaithersburg), *International Journal of Computer Mathematics* **2**, 269–277 (1970).

A New Class of Adaptive Array Processors, J. H. Chang and F. B. Tuteur (RES Yorktown Hts.), *Journal of the Acoustical Society of America* **49**, No. 3, Part 1, 639–649 (March, 1971).

A Comparison of Preference Measurement Methods, E. H. Rothaus (RES Zürich), G. E. Urbanek and W. P. Pacht (Univ. of Technology, Vienna, Austria), *Journal of the Acoustical Society of America* **49**, No. 4, Part 2, 1297–1308 (April, 1971).

Effects of Strain on the Solid Solution Formation of a Silver-Palladium Paste, G. A. Walker (CD E. Fishkill), *Journal of the American Ceramic Society* **54**, No. 4, 215–217 (April, 1971).

Photoisomerization of Certain Stilbenes to 9,10-Dihydrophenanthrenes, R. Srinivasan and J. N. C. Hsu (Yorktown Hts.), *Journal of the American Chemical Society* **93**, No. 11, 2816–2817 (June 2, 1971).

Human Factors in the Design of an Interactive Library System, C. McAllister and J. M. Bell (ASDD Los Gatos), *Journal of the American Society for Information Science* **22**, No. 2, 96–104 (March/April, 1971).

DETECTORS—Comparison of Superconducting and Semi-conducting Bolometers, C. L. Bertin (CD E. Fishkill) and K. Rose (Rensselaer Polytechnic Institute), *Journal of Applied Physics* **42**, No. 1, 163–166 (January, 1971).

Magneto-Acoustoelectric Effects in InP, D. G. Carlson, E. Mosekilde and J. M. Woodall (RES Yorktown Hts.), *Journal of Applied Physics* **42**, No. 3, 925–929 (March, 1, 1971).

Charge Carrier Dynamics Following Pulsed Photoinjection, I. P. Batra, K. K. Kanazawa, B. H. Schechtman and H. Seki (RES San Jose), *Journal of Applied Physics* **42**, No. 3, 1124–1130 (March 1, 1971).

Magnetoresistive Detector for Bubble Domains, G. S. Almasi, G. E. Keefe, Y. S. Lin and D. A. Thompson (RES Yorktown Hts.), *Journal of Applied Physics* **42**, No. 4, 1268-1269 (March 15, 1971).

Photoemission Studies of f States and Valence Bands in Several Rare-earth and Uranium Compounds, D. E. Eastman (RES Yorktown Hts.), and M. Kuznietz (Argonne National Laboratory, Argonne, Ill.), *Journal of Applied Physics* **42**, No. 4, 1396-1402 (March 15, 1971).

Photoconductivity Mechanisms in the Magnetic Semiconductor EuSe, T. Penney and T. Kasuya (RES Yorktown Hts.), *Journal of Applied Physics* **42**, No. 4, 1403-1409 (March 15, 1971).

Correlation of Electrons in a Degenerate Band, K. A. Chao and M. C. Gutzwiller (RES Yorktown Hts.), *Journal of Applied Physics* **42**, No. 4, 1420-1421 (March 15, 1971).

Thermopower of Dilute Alloys of Cerium in Lanthanum, W. D. Grobman (RES San Jose), *Journal of Applied Physics* **42**, No. 4, 1456-1457 (March 15, 1971).

Evidence of the Intrinsic Metallic Character of Some Rare-earth Pnictides, R. J. Gambino, D. E. Eastman, T. R. McGuire, V. L. Moruzzi and W. D. Grobman (RES Yorktown Hts.), *Journal of Applied Physics* **42**, No. 4, 1468-1469 (March 15, 1971).

Crystal Preparation, Structures, and Magnetic Properties of Layer-type $Cs_2B_3F_{10}$ Compounds ($B = Fe, Co, Ni$), M. W. Shafer, T. R. McGuire and J. Weidenborner (RES Yorktown Hts.), *Journal of Applied Physics* **42**, No. 4, 1489-1490 (March 15, 1971).

La NMR Studies in $LaIn_3$, L. B. Welsh (Northwestern Univ., Evanston, Ill.), R. J. Gambino and A. M. Toxen (RES Yorktown Hts.), *Journal of Applied Physics* **42**, No. 4, 1545-1546 (March 15, 1971).

Magneto-optical Properties of Sputtered Mn_5Ge_3 Films, E. Sawatzky (RES San Jose), *Journal of Applied Physics* **42**, No. 4, 1706-1707 (March 15, 1971).

Preparation and Structure of Fe-doped EuO Films, K. Y. Ahn, K. N. Tu and W. Reuter (RES Yorktown Hts.), *Journal of Applied Physics* **42**, No. 4, 1769-1770 (March 15, 1971).

Dependence of the E₁ Reflectivity Structure in EuO on Temperature and Doping, P. M. Grant (RES San Jose), *Journal of Applied Physics* **42**, No. 4, 1771-1772 (March 15, 1971).

Magnetic and Magneto-optical Properties of Fe-doped EuO Films, T. R. McGuire, G. F. Petrich, B. L. Olson, V. L. Moruzzi and K. Y. Ahn (RES Yorktown Hts.), *Journal of Applied Physics* **42**, No. 4, 1775-1777 (March 15, 1971).

Annealing Study of EuO Films Doped with Iron and Europium, J. C. Suits, K. Lee, H. F. Winters, P. B. P. Phipps and D. F. Kyser (RES San Jose), *Journal of Applied Physics* **42**, No. 4, 1777-1778 (March 15, 1971).

Closed Grain-oriented Magnetic Core, J. A. Pesch and A. L. Ward (GSD Rochester), *Journal of Applied Physics* **42**, No. 4, 1800-1801 (March 15, 1971).

Longitudinal Piezoresistance of $Al_xGa_{1-x}As$, J. C. McGroddy, M. R. Lorenz and J. E. Smith, Jr. (RES Yorktown Hts.), *Journal of Applied Physics* **42**, No. 5, 1852-1853 (April, 1971).

Gunn Effect in InAs under Hydrostatic Pressure, J. E. Smith, Jr. (RES Yorktown Hts.) and D. L. Camphausen (Harvard Univ., Cambridge, Mass.), *Journal of Applied Physics* **42**, No. 5, 2064-2067 (April, 1971).

Transient Optical Double Injection in Insulators, W. D. Gill and I. P. Batra (RES San Jose), *Journal of Applied Physics* **42**, No. 5, 2067-2073 (April, 1971).

Probability Models for Buffer Storage Allocation Problems, D. P. Gaver, Jr. (Carnegie-Mellon Univ., Pittsburgh, Pa.) and P. A. W. Lewis (RES Yorktown Hts.), *Journal of the ACM* **18**, No. 2, 186-198 (April, 1971).

A Cyclic-queue Model of System Overhead in Multiprogrammed Computer Systems, P. A. W. Lewis and G. S. Shedler (RES Yorktown Hts.), *Journal of the ACM* **18**, No. 2, 199-220 (April, 1971).

Magnetic Susceptibility Evidence for a Binuclear Iron Complex in Hemerythrin, T. H. Moss, C. Moleski (RES Yorktown Hts.), and J. L. York (Univ. of Arkansas School of Medicine), *Journal of Biochemistry* **10**, No. 5, 840-842 (March 2, 1971).

Results of ab initio Calculations on Formamide, R. N. Kortzeborn (DPD Scientific Ctr., Palo Alto), D. H. Christensen, B. Bak and J. J. Led (Univ. of Copenhagen), *Journal of Chemical Physics* **53**, No. 10, 3912 (November, 1970).

Infrared Lasers Resulting from Giant Pulse Laser Excitation of Alkali Metal Molecules, P. P. Sorokin and J. R. Lankard (RES Yorktown Hts.), *Journal of Chemical Physics* **54**, No. 5, 2184-2190 (March 1, 1971).

Study of the Electronic Structure of Molecules. XIV. Point Charge Perturbation on Periodic Systems, E. Clementi (RES San Jose), *Journal of Chemical Physics* **54**, No. 6, 2492-2498 (March 15, 1971).

Interaction Potential Between Li^+ and H_2 . II. Region Appropriate for Vibrational Excitation, W. A. Lester, Jr. (RES San Jose), *Journal of Chemical Physics* **54**, No. 7, 3171-3179 (April 1, 1971).

Gel Permeation Chromatography: Diffusional Phenomena in Dilute Polymer Solutions Flowing in Capillaries, A. C. Ouano (RES Yorktown Hts.) and J. A. Biesenberger (Stevens Institute of Technology, Hoboken, N. J.), *Journal of Chromatography* **55**, 145-154 (1971).

Flux Growth of Large Crystals by Accelerated Crucible-rotation Technique, H. J. Scheel and E. O. Schulz-Dubois (RES Zürich), *Journal of Crystal Growth* **8**, 304-306 (1971).

Epitaxial Oxide Films by Sputtering, E. Kay (RES San Jose), *Journal of Crystal Growth* **9**, 273 (1971).

Growth Characteristics of Alpha-Silicon Carbide I. Chemical Vapor Deposition, J. M. Harris. (Monolithic Memories, Sunnyvale, Calif.), H. C. Gatos and A. F. Witt (M.I.T.), *Journal of the Electrochemical Society* **118**, No. 2, 335-338 (February, 1971).

Corrosion and Passivation of Thin Molybdenum Films, L. H. Lee and V. Y. Doo (CD E. Fishkill), *Journal of the Electrochemical Society* **118**, No. 3, 443-446 (March, 1971).

Application of Triangular Voltage Sweep Method to Mobile Charge Studies in MOS Structures, N. J. Chou (RES Yorktown Hts.), *Journal of the Electrochemical Society* **118**, No. 4, 601-609 (April, 1971).

Stability of Electrical Networks Containing RC Components, G. M. Prada (CD E. Fishkill) and T. A. Bickart (Syracuse Univ.), *Journal of Mathematical Analysis and Applications* **33**, No. 2, 1-35 (February, 1971).

Periodic Orbits and Classical Quantization Conditions, M. C. Gutzwiller (RES Yorktown Hts.), *Journal of Mathematical Physics* **12**, No. 3, 343-358 (March, 1971).

Pulse Induced Photocurrents and Field Distributions in Photoconductor-Dielectric Structures, I. P. Batra and B. H. Schechtman (RES San Jose), *Journal of Physics and Chemistry of Solids* **32**, No. 4, 769-786 (April, 1971).

Synthesis and Polymerization of 5-Vinyl-2,2-Bithiophen, E. Gipstein, W. A. Hewett and O. U. Need (RES San Jose), *Journal of Polymer Science* **9**, Part A-1, No. 3, 813-816 (March, 1971).

Polyvinyl Cinnamate Photoresists and Their Behavior, R. K. Agnihotri, F. P. Hood, L. G. Lesoine (CD E. Fishkill) and J. A. Offenbach (CD Burlington), *Journal of the Society of Photographic Scientists and Engineers* **15**, No. 2, 141-147 (March/April, 1971).

Making Technical Writing Easier, L. C. Hawes (SDD Raleigh), *Journal of Technical Writing and Communication* **1**, No. 2, 161-172 (April, 1971).

Reflexive and Emphatic, J. A. Moyne (FSD N. Y. C.), *Language* **47**, No. 1, 141-163 (March, 1971).

Electrochemical Deburring, R. Tschritter (GSD Rochester), *Manufacturing Engineering and Management* **66**, No. 3, 10 (March, 1971).

Garnet Compositions for Bubble Domain Systems Utilizing Stress-induced Uniaxial Anisotropy, E. A. Giess, B. A. Calhoun, E. Klokholm, T. R. McGuire and L. L. Rosier (RES Yorktown Hts.), *Materials Research Bulletin* **6**, 317-328 (1971).

Charge Storage Phenomena in Al-Y-Al₂O₃-SiO₂-Si, N. J. Chou (RES Yorktown Hts.) and P. J. Tsang (CD East Fishkill), *Metallurgical Transactions* **2**, No. 3, 659-665 (March, 1971).

The Effect of Copper Additions on Electromigration in Aluminum Thin Films, F. M. d'Heurle (RES Yorktown Hts.), *Metallurgical Transactions* **2**, No. 3, 683-689 (March, 1971).

Electron Beam Processing of Interconnection Structures in Multi-layer Ceramic Modules, W. W. Koste (CD E. Fishkill), *Metallurgical Transactions* **2**, No. 3, 729-731 (March, 1971).

Capillary-infiltrated Conductors in Ceramics, D. A. Chance and D. L. Wilcox (CD E. Fishkill), *Metallurgical Transactions* **2**, No. 3, 733-741 (March, 1971).

Small Area Deposition of Ge on Ge or GaAs Substrates via the Disproportionation of GeI₂, M. Berkenblit and A. Reisman (RES Yorktown Hts.), *Metallurgical Transactions* **2**, No. 3, 803-808 (March, 1971).

Light Scattering Spectrum of a Nematic Liquid, I. Haller and J. D. Litster (RES Yorktown Hts.), *Molecular Crystals and Liquid Crystals* **12**, 277-287 (1971).

An Experimental Test of the Boltzmann Equation: Argon, J. A. Barker (RES San Jose), M. V. Bobetic (Univ. of Waterloo, Waterloo, Ontario) and A. Pompe (C. S. I. R. O., Melbourne, Australia), *Molecular Physics* **20**, No. 2, 347-355 (1971).

Midstream Evaluation A = 88, C. D. Goodman (Oak Ridge), T. A. Hughes (DPD Scientific Ctr., Houston), M. W. Johns (McMaster Univ., Ontario, Canada) and K. Way (Duke Univ.), *Nuclear Data* **8**, No. 4, 323-343 (December, 1970).

Electron Correlations at Metallic Densities, T. Schneider (RES Zürich), *Physica* **52**, 481-488 (1971).

Three-body Interactions in Liquid and Solid Helium, R. D. Murphy and J. A. Barker (RES San Jose), *Physical Review A3*, No. 3, 1037-1040 (March, 1971).

Quadratic Stark Effect in the ²P_{3/2} States of the Alkali Atoms, R. W. Schmieder, A. Lurio (RES Yorktown Hts.) and W. Happer (Columbia Univ., New York), *Physical Review A3*, No. 4, 1209-1217 (April, 1971).

Green's Function Method for Canonical Ensemble II. Response Function Calculations, J. W. F. Woo and P. C. Kwok (RES Yorktown Hts.), *Physical Review A3*, No. 6, 2039-2041 (June, 1971).

Lack of Evidence for Intrinsic Surface States in Ni and Cu, D. E. Eastman (RES Yorktown Hts.), *Physical Review B3*, No. 5, 1769-1770 (March 1, 1971).

Dispersion of the Non-linear Optical Susceptibility in n-InSb⁺, E. Yablonovitch (Harvard Univ., Cambridge, Mass.), N. Bloembergen (RES Yorktown Hts.) and J. J. Wynn (Harvard Univ., Cambridge, Mass.), *Physical Review B3*, No. 6, 2060-2062 (March 15, 1971).

Excited-state Absorption Cross Sections for the Cr³⁺ in MgO and Spinel, R. M. Macfarlane (RES San Jose), *Physical Review B3*, No. 7, 2129-2133 (April 1, 1971).

Electron Paramagnetic Resonance of Mn²⁺ in KTaO₃, D. M. Hannon (RES Yorktown Hts.), *Physical Review B3*, No. 7, 2153-2158 (April 1, 1971).

Band-tail Model for Optical Absorption and for the Mobility Edge in Amorphous Silicon, F. Stern (RES Yorktown Hts.), *Physical Review B3*, No. 8, 2636-2645 (April 15, 1971).

Volume Dependence of the Spin-orbit Splitting in Representative Semiconductors from High Pressure Electroreflectivity Measurements and Relativistic OPW Calculations, P. J. Melz (Harvard Univ., Cambridge, Mass.) and I. B. Ortenburger (RES Yorktown Hts.), *Physical Review B3*, No. 10, 3257-3266 (May 15, 1971).

Structure Phase Transitions in Spinel Induced by the Jahn-Teller Effect, E. Pytte (RES Yorktown Hts.), *Physical Review B3*, No. 10, 3503-3509 (May 15, 1971).

Optical Absorption Edge of Compensated Germanium, F. Stern (RES Yorktown Hts.), *Physical Review B3*, No. 10, 3559-3560 (May 15, 1971).

Anharmonic Interactions in Aluminum. II, N. S. Gillis (Sandia Laboratories, Albuquerque, N. M.) and T. R. Koehler (RES San Jose), *Physical Review B3*, No. 10, 3568-3571 (May 15, 1971).

Transient Space-charge-limited Currents in Photoconductor-dielectric Structures: a Comment, I. P. Batra, B. H. Schechtman and H. Seki (RES San Jose), *Physical Review B3*, No. 10, 3571-3572 (May 15, 1971).

Energy-dependent Photoemission Intensities of "f"-states in EuS, GdS and US, D. E. Eastman (RES Yorktown Hts.) and M. Kuznietz (Argonne National Laboratory, Argonne, Ill.), *Physical Review Letters* 26, No. 14, 846-850 (April 5, 1971).

Exchange Induced Autoionization in Eu-Rich EuO, G. Petrich and T. Penney (RES Yorktown Hts.), *Physical Review Letters* 26, No. 15, 885-888 (April 12, 1971).

Photoluminescence of Amorphous $2As_2Te_3 \cdot As_2Se_3$, R. Fischer, U. Heim, F. Stern and K. Weiser (RES Yorktown Hts.), *Physical Review Letters* 26, No. 19, 1182-1185 (May 10, 1971).

Electron Critical Scattering in EuS-In Ferromagnetic Tunnel Junctions, W. A. Thompson, F. Holtzberg and T. R. McGuire (RES Yorktown Hts.), *Physical Review Letters* 26, No. 21, 1308-1310 (May 24, 1971).

Accurate Calculation of the Low-energy Electron-diffraction Spectra of Al by the Layer-KKR Method, D. W. Jepsen, P. M. Marcus (RES Yorktown Hts.) and F. Jona (State Univ. of N. Y. at Stony Brook), *Physical Review Letters* 26, No. 22, 1365-1368 (May 31, 1971).

Enhanced Ferromagnetic Exchange in EuO Films Doped with Eu and Nonmagnetic Ions, K. Lee and J. C. Suits (RES San Jose), *Physics Letters* 34A, No. 3, 141-142 (February 22, 1971).

Lattice Dynamics of Solid Kr, J. A. Barker (RES San Jose), M. V. Bobetic (Univ. of Waterloo, Waterloo, Ontario) and M. L. Klein (National Research Council of Canada), *Physics Letters* 34A, No. 7, 415-416 (April 19, 1971).

On the Electron Band Structure of Liquid Metals, E. Stoll, N. Szabo (Swiss Federal Institute for Reactor Research) and T. Schneider (RES Zürich), *Physik der Kondensierten Materie* 12, 279-286 (1971).

Spectrographic Determination of Boron in Electroless Nickel Coating, T. S. Long and N. T. Gonnella (GSD Rochester), *Plating* 58, No. 2, 132-134 (February 22, 1971).

Plasma Refractive Index Measurements Utilizing a He-Ne Vernier Interferometric Laser, P. Zory and G. Lynch (RES Yorktown Hts.), *Proceedings of the IEEE* 59, No. 4, 684-689 (April, 1971).

Transient Heat Flow from an Epitaxial Layer into the Substrate, E. Mosekilde, P. A. Lebowitz and D. G. Carlson (RES Yorktown Hts.), *Proceedings of the IEEE* 59, No. 6, 1030-1032 (June, 1971).

One- and Two-fluid van der Waals Theories of Liquid Mixtures. II. 6:12 Molecules, D. Henderson (RES San Jose) and P. J. Leonard (National Research Council of Canada), *Proceedings of the National Academy of Sciences* 68, No. 3, 632-635 (March, 1971).

Superplastic Alloy can Mold Prototype Parts Cheaper, Faster, D. W. Davis (GSD Rochester), A. D. Belt, D. Freeman, C. W. Hildenbrandt, D. C. Stapleton and R. J. Young (OPD Lexington), *Product Engineering* 42, No. 8, 36 (April 12, 1971).

Radiochemical Determination of Damage Profiles in Silicon, B. J. Masters (CD E. Fishkill), B. L. Crowder (RES Yorktown Hts.) and J. M. Fairfield (Semiconductor Electronic Memories, Inc., Phoenix, Arizona), *Radiation Effects* 6, No. 1 & 2, 57-61 (November, 1970).

Resistivity and Annealing Properties of Implanted Si:H⁺, G. H. Schwuttke, K. Brack, E. F. Gorey (CD E. Fishkill), A. Kahan and L. F. Lowe (Air Force Research Labs., Cambridge, Mass.), *Radiation Effects* 6, No. 1 & 2, 103-106 (November, 1970).

Advances in Pattern Recognition, R. G. Casey and G. Nagy (RES Yorktown Hts.), *Scientific American* 224, No. 4, 56-71 (April, 1971).

Necessary and Sufficient Optimality Conditions, E. R. Barnes (RES Yorktown Hts.), *SIAM Journal on Control* 9, No. 1, 62-82 (February, 1971).

Numerical Stability of the Schur-Cohn Criterion, I. I. Gargantini (RES Zürich), *SIAM Journal on Numerical Analysis* 8, No. 1, 24-29 (March, 1971).

Convergence Conditions for Ascent Methods II: Some Corrections, P. Wolfe (RES Yorktown Hts.), *SIAM Review* 13, No. 2, 185-188 (April, 1971).

A Computer Model for the Financial Analysis of Urban Housing Projects, D. C. Gazis (RES Yorktown Hts.), *Socio-Economic Planning Sciences* 5, 125-144 (1971).

High Resolution Method for Calculating Spectra of Solids III, N. W. Dalton (RES Yorktown Hts.), *Solid State Communications* 8, No. 24, 2047-2051 (December 15, 1970).

On Flat Phonons in b-Brass, G. Gilat (RES San Jose), *Solid State Communications* **8**, No. 24, 2053-2054 (December 15, 1970).

Model for Ferroelectric $Gd_2(MoO_4)_3$, E. Pytte (RES Yorktown Hts.), *Solid State Communications* **8**, No. 24, 2101-2104 (December, 15, 1970).

Raman Scattering and Phase Transitions in Stressed $SrTiO_3$, W. J. Burke, R. J. Pressley (RCA Laboratories, Princeton, N. J.) and J. C. Slonczewski (RES Yorktown Hts.), *Solid State Communications* **9**, No. 2, 121-124 (January 15, 1971).

The Semivacancy Pair in Crystalline Silicon, B. J. Masters (CD E. Fishkill), *Solid State Communications* **9**, No. 4, 283-286 (February 15, 1971).

Interpretation of Electric Field Effects in EPR of Gd^{3+} in $SrTiO_3$, K. A. Müller (RES Zürich), *Solid State Communications* **9**, No. 6, 373-377 (1971).

Electrical Junction Delineation by Scanning Electron Beam Technique, G. V. Lukianoff (CD E. Fishkill), *Solid State Technology* **14**, No. 3, 39-43 (March, 1971).

TYPE-ALL System for Determining Semiconductor Conductivity Type, W. A. Kennan, C. Snyder and C. A. Pillus (CD E. Fishkill), *Solid State Technology* **14**, No. 3, 51-56 (March, 1971).

Radioactive Method for the Determination of Sticking Coefficients: Ge on Ge (111), F. Jona (State Univ. of N. Y. at Stony Brook) and H. R. Wendt (RES Yorktown Hts.), *Surface Science* **24**, 343-349 (1971).

The Chemisorption of Nitrogen at Activated Sites on a Polycrystalline Tungsten Surface, H. F. Winters and D. E. Horne (RES San Jose), *Surface Science* **24**, 587-611 (1971).

On the Measurement of Fund Performance, H. D. Mills, *The Journal of Finance* **25**, No. 5, 1125-1131 (December, 1970).

Analysis of Sequential Effects for a Four-choice Reaction Time Experiment, R. J. Remington (SDD Raleigh), *The Journal of Psychology* **77**, 17-27 January, 1971).

Regional Automated Data Processing System for Blood Banks, M. O'Hara (FSD Gaithersburg) and A. M. Josephson (The Michael Reese Foundation and Blood Center), *Transfusion* **10**, No. 1, 215-220 (July/August, 1970).

Calculation of Evaporated Film Thickness Distribution on Non-planar Surfaces for Variable Angle Vapor Incidence, C. A. Wasik and J. J. Gniewek (CD E. Fishkill), *Vacuum Science and Technology* **8**, No. 2, 441-445 (March/April, 1971).

Ein Kurvengetriebe für Vier Rasten Veraenderlicher Dauer (A Cam Drive for Four Stops of Variable Duration), H. D. Matthaei (SDD Boeblingen), *VDI-Berichte* No. 167, 153-158 (1971).

Three-dimensional, Transient, Saturated-Unsaturated Flow in a Groundwater Basin, R. A. Freeze (RES Yorktown Hts.), *Water Resources Research* **7**, No. 2, 347-366 (April, 1971).

Investigation of Tape Edge Wear, F. E. Talke (RES San Jose), *Wear* **17**, No. 1, 21-32 (January, 1971).