

# Recent Papers by IBM Authors

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\* Papers are listed alphabetically by name of journal.

## A

**Analysis of Compressible Turbulent Flow Over A Yawed Cone**, A. R. Mowlen (SPD East Fishkill, NY) and R. A. Smith (Catholic Univ., Washington, DC), *AIAA Journal* 12, No. 9, 1171-1172 (September 1974).

**High Resolution Lenses for Optical Waveguides**, E. Spiller and J. S. Harper (RES Yorktown Hts., NY), *Applied Optics* 13, No. 9, 2105-2108 (September 1974).

**Measurements of Charge Propagation in  $\text{Si}_3\text{N}_4$  Films**, B. H. Yun (RES Yorktown Hts., NY), *Applied Physics Letters* 25, No. 6, 340-342 (September 15, 1974).

**Magnetic Anisotropy in Pb-substituted  $\text{Eu}_3\text{Fe}_5\text{O}_{12}$  Films**, T. S. Plaskett, E. Klokholm, D. C. Cronmeyer, P. C. Yin, and S. E. Blum (RES Yorktown Hts., NY), *Applied Physics Letters* 25, No. 6, 357-359 (September 15, 1974).

**Extended Dislocations in  $\text{GaAs}_{0.7}\text{P}_{0.3}$** , S. Mader and A. E. Blakeslee (RES Yorktown Hts., NY), *Applied Physics Letters* 25, No. 7, 365-367 (October 1, 1974).

**A Single Flux Quantum Josephson Junction Memory Cell**, H. H. Zappe (RES Yorktown Hts., NY), *Applied Physics Letters* 25, No. 7, 424-426 (October 1, 1974).

**Experimental Observation of the Switching Transients Resulting from Single Flux Quantum Transitions in Superconducting Josephson Devices**, P. Guéret (RES Zurich, Switzerland), *Applied Physics Letters* 25, No. 7, 426-428 (October 1, 1974).

**Identification of the Dominant Diffusing Species in Silicide Formation**, W. K. Chu, H. Kräutle, J. W. Mayer, H. Müller, and M. A. Nicolett (California Institute of Technology, Pasadena) and K. N. Tu (RES Yorktown Hts., NY), *Applied Physics Letters* 25, No. 8, 454-457 (October 15, 1974).

**Continuously Tunable Xenon Laser at 1720 Å**, S. C. Wallace and R. W. Dreyfus (RES Yorktown Hts., NY), *Applied Physics Letters* 25, No. 9, 498-500 (November 1, 1974).

**The Electrical Effect on Schottky Barrier Diodes of Si Crystallization from Al-Si Metal Films**, T. M. Reith and J. D. Schick (SPD East Fishkill, NY), *Applied Physics Letters* 25, No. 9, 524-526 (November 1, 1974).

## B

**Intensity Fluctuation Spectroscopy of Laser Light Scattered by Solutions of Spherical Viruses: R17, Q $\beta$ , BSV, PM2, and T7. II. Diffusion Coefficients, Molecular Weights, Solvation and Particle Dimensions**, R. D. Camerini-Otero and R. M. Franklin (Public Health Research Institute of the City of New York, NY) and P. N. Pusey, D. E. Koppel and D. W. Schaefer (RES Yorktown Hts., NY), *Biochemistry* 13, No. 5, 960-970 (1974).

## C

**Lifetimes of Triplet Formaldehyde**, A. C. Luntz and V. T. Maxson (RES San Jose, CA), *Chemical Physics Letters* 26 No. 4, 553-556 (June 15, 1974).

**Zero-Phonon Transitions and Vibronic Coupling in the 1:1 Charge-Transfer Crystal Anthracene-Pyromellitic-Acid-Dianhydride**, D. Haarer (RES San Jose, CA), *Chemical Physics Letters* 27, No. 1, 91-95 (July 1, 1974).

**Calculation of the Electronic Structure of Formaldehyde Using Overlapping Spheres in the SCF  $X\alpha$  Scattered-Wave Method**, I. P. Batra and O. Robaux (RES San Jose, CA), *Chemical Physics Letters* 28, No. 4, 529-531 (October 15, 1974).

**A Note on the Calculation of Average Working Set Size**, D. R. Slutz and I. L. Traiger (RES San Jose, CA), *Communications of the Association for Computing Machinery* 17, No. 10, 563-565 (October 1974).

**Some Computer Experiments in Picture Processing for Data Compaction**, C. K. Chow, B. L. Deekshatulu and L. S. Loh (RES Yorktown Hts., NY), *Computer Graphics and Image Processing* 3, No. 3, 203-214 (1974).

## I

**Injection-Coupled Memory: A High-Density Static Bipolar Memory**, S. K. Wiedman (IBM Germany, Boeblingen), *IEEE Journal of Solid-State Circuits* SC-8, No. 5, 332-337 (October 1973).

**Terminal-Oriented Model for Merged Transistor Logic (MTL)**, H. H. Berger and S. K. Wiedmann (IBM Germany, Boeblingen), *IEEE Journal of Solid-State Circuits* SC-9, No. 5, 211-217 (October 1974).

**The Injection Model—A Structure-Oriented Model for Merged Transistor Logic (MTL)**, H. H. Berger (IBM Germany, Boeblingen), *IEEE Journal of Solid-State Circuits* SC-9, No. 5, 218-227 (October 1974).

**Femtojoule Josephson Tunneling Logic Gates**, D. J. Herrell (RES Yorktown Hts., NY), *IEEE Journal of Solid-State Circuits* SC-9, No. 5, 277-282 (October 1974).

**A Means for Achieving a High Degree of Compaction on Scan-Digitized Printed Text**, R. N. Ascher and G. Nagy (RES Yorktown Hts., NY), *IEEE Transactions on Computers* C-23, No. 11, 1174-1179 (November 1974).

**Hypothesis Testing and Information Theory**, R. E. Blahut (FSD Owego, NY), *IEEE Transactions on Information Theory* IT-20, No. 4, 405-417 (July 1974).

**Digital Magnetic Recording Theory**, R. I. Potter (RES Yorktown Hts., NY), *IEEE Transactions on Magnetics* MAG-10, No. 3, 502-508 (September 1974).

An All-Bubble Text-Editing System, S. Y. Lee and H. Chang (RES Yorktown Hts., NY), *IEEE Transactions on Magnetics* MAG-10, No. 3, 746-749 (September 1974).

Bubble to T-I Bar Coupling in Amorphous Film Small Bubble Devices, M. H. Kryder, K. Y. Ahn, G. S. Almasi, G. E. Keefe, and J. V. Powers (RES Yorktown Hts., NY), *IEEE Transactions on Magnetics* MAG-10, No. 3, 825-827 (September 1974).

Advantages and Special Considerations in Fabricating Bubble Circuits by Electroplating and Sputter Etching, L. T. Romankiw, S. Krongelb, E. E. Castellani, A. T. Pfeiffer, B. J. Stoeber, and J. D. Olsen (RES Yorktown Hts., NY), *IEEE Transactions on Magnetics* MAG-10, No. 3, 828-831 (September 1974).

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An Elementary Logic Circuit Employing Superconducting Josephson Tunneling Gates, W. H. Henkels (RES Yorktown Hts., NY), *IEEE Transactions on Magnetics* MAG-10, No. 3, 860-863 (September 1974).

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## J

Separation of the Particle Size and Microstrain Components in the Fourier Coefficients of a Single Diffraction Profile, A. Gangulee (RES Yorktown Hts., NY), *Journal of Applied Crystallography* 7, No. 4, 434-439 (August 1, 1974).

Annealing Properties of Ion-Implanted p-n Junctions in Silicon, A. E. Michel (SPD East Fishkill, NY), F. F. Fang and E. S. Pan (RES Yorktown Hts., NY), *Journal of Applied Physics* 45, No. 7, 2991-2996 (July 1974).

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Photon Recycling in Semiconductor Lasers, F. Stern and J. M. Woodall (RES Yorktown Hts., NY), *Journal of Applied Physics* 45, No. 9, 3904-3906 (September 1974).

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Bubble Domains in Double Garnet Films, Y. S. Lin and P. J. Grundy (RES Yorktown Hts., NY), *Journal of Applied Physics* 45, No. 9, 4084-4094 (September 1974).

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A Population Birth-and-Mutation Process, I: Explicit Distributions for the Number of Mutants in an Old Culture of Bacteria, B. Mandelbrot (RES Yorktown Hts., NY), *Journal of Applied Probability* 11, 437-444 (1974).

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Analytical Hartree-Fock Functions for Positive Ions from Lithium to Xenon, C. Roetti and E. Clementi (RES San Jose, CA), *Journal of Chemical Physics* 61, No. 5, 2062-2063 (September 1, 1974).

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**Fluxional Main Group IV Organometallic Compounds: The Implications for Orbital Symmetry Rules**, R. B. Larrabee (RES San Jose, CA), *Journal of Organometallic Chemistry* **74**, No. 3, 313-364 (July 30, 1974).

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**A Generalization of Max Flow-Min Cut**, A. J. Hoffman (RES Yorktown Hts., NY), *Mathematical Programming* **6**, No. 3, 352-359 (June 1974).

**Low Melting Nematic Derivatives of Phenyl 3-Methyl-Benzoyloxybenzoate**, W. R. Young and D. C. Green (RES Yorktown Hts., NY), *Molecular Crystals and Liquid Crystals* **26**, No. 1/2, 7-9 (1974).

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**Laser Thermoprobe**, H. Wieder (RES San Jose, CA), *Optics Communications* **11**, No. 3, 301-304 (July 1974).

## P

**Phonon Hydrodynamics in Solids**, H. Beck (Cornell Univ. Ithaca, NY), P. F. Meier (RES Zurich, Switzerland), and A. Thellung (Institute for Theoretical Physics, Univ. of Zurich), *Physica Status Solidi A* **24**, No. 1, 11-63 (July 16, 1974).

**Tensor Polarizability of the  $2^1P_1$  State of  $He^4$  by Electric-Field Level Crossing**, N. D. Bhaskar (Columbia Univ., New York, NY) and A. Lurio (RES Yorktown Hts., NY), *Physical Review A* **10**, No. 5, 1685-1699 (November 1974).

**Master-Equation Approach to Stochastic Models of Crystal Growth**, H. Müller-Krumbhaar (RES Zurich, Switzerland), *Physical Review B* **10**, No. 4, 1308-1314 (August 15, 1974).

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**Lattice Distortions in One-Dimensional Ising Chains**, E. Pytte (RES Yorktown Hts., NY), *Physical Review B* **10**, No. 5, 2039-2043 (September 1, 1974).

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**The Droplet Model in Three Dimensions: Monte Carlo Calculation Results**, H. Müller-Krumbhaar (RES Zurich, Switzerland), *Physics Letters* **48A**, No. 6, 459-460 (July 29, 1974).

**Flash Exposure System for Thin Photoresist Films**, D. E. O'Hara and W. F. Beuschel (SPD Burlington, VT), *Polymer Engineering and Science* **14**, No. 7, 509-512 (July 1974).

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## T

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**Stereoselectivity of the Photochemical Ring Expansion of Some Polycyclic Cyclobutanones**, R. D. Miller, D. L. Dolce, and V. Y. Merritt (RES San Jose, CA), *Tetrahedron Letters*, No. 37, 3347-3350 (September 1974).

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**Kinetic Ising Model Study of Phase Separation in Binary Alloys**, K. Binder (RES Zurich, Switzerland), *Zeitschrift für Physik* 267, No. 4, 313-322 (1974).

◆ *Book abstract*

*The Chebyshev Polynomials*, T. J. Rivlin (RES Yorktown Hts., NY), John Wiley & Sons, Inc., New York, 1974.

The author surveys the more important properties of the Chebyshev polynomials and introduces several areas of mathematical analysis via the example of the Chebyshev polynomials: interpolation theory, orthogonal polynomials, approximation theory, numerical integration, numerical analysis, and ergodic theory.