

PAPERS BY AT&T BELL LABORATORIES AUTHORS

COMPUTING/MATHEMATICS

- Bentley J., **Perspective on Performance.** *Comm ACM* 27(11):1087-1092, Nov 1984.
- Brotman L. S., Badler N. I., **Generating Soft Shadows With a Depth Buffer Algorithm.** *IEEE Comp G* 4(10):5-12, Oct 1984.
- Calderbank A. R., Coffman E. G., Flatto L., **Optimum Head Separation in a Disk System With Two Read Write Heads.** *J ACM* 31(4):826-838, Oct 1984.
- Calderbank R., Wales D. B., **The Haemers Partial Geometry and the Steiner System S(5,8,24).** *Discr Math* 51(2):125-136, Sep 1984.
- Fishburn P. C., **Equity Axioms for Public Risks.** *Operat Res* 32(4):901-908, Jul-Aug 1984.
- Golumbic M. C., Monma C. L., Trotter W. T., **Tolerance Graphs.** *Discr App W* 9(2):157-170, Oct 1984.
- Graham R. L., Sloane N. J. A., **Anti-Hadamard Matrices.** *Lin Alg App* 62(Nov):113-137, Nov 1984.
- Jarvis J. F., **Robotics.** *Computer* 17(10):283-292, Oct 1984.
- Korner J., Wei V. K., **Odd and Even Hamming Spheres Also Have Minimum Boundary.** *Discr Math* 51(2):147-165, Sep 1984.
- Lagarias J. C., Mazo J. E., Shepp L. A., **An Inequality for Walks in a Graph (Letter).** *Siam Rev* 26(4):580-582, Oct 1984.
- Lee T. T., **M/G/I/N Queue With Vacation Time and Exhaustive Service Discipline.** *Operat Res* 32(4):774-784, Jul-Aug 1984.
- Melamed B., Yadin M., **Numerical Computation of Sojourn-Time Distributions in Queuing Networks.** *J ACM* 31(4):839-854, Oct 1984.
- Melamed B., Yadin M., **Randomization Procedures in the Computation of Cumulative-Time Distributions Over Discrete State Markov Processes.** *Operat Res* 32(4):926-944, Jul-Aug 1984.
- Mitra D., Weinberger P. J., **Probabilistic Models of Database Locking—Solutions, Computational Algorithms, and Asymptotics.** *J ACM* 31(4):855-878, Oct 1984.

ENGINEERING

- Alferness R. C., Eisenstein G., Korotky S. K., Tucker R. S., Buhl L. L., Kaminow I. P., Burrus C. A., Veselka J. J., **Mode-Locking a Ti-LiNbO₃-InGaAsP InP Composite Cavity Laser With an Integrated High-Speed Directional Coupler Switch.** *Appl Phys L* 45(9):944-946, Nov 1 1984.
- Atwood D. K., Fisanick G. J., Johnson W. A., Wagner A., **Defect Repair Techniques for X-Ray Masks.** *P Soc Photo* 471:127-134, 1984.
- Barnes Y., Bunin H., **Interference in Frequency-Locked Doppler Tracking Loops.** *IEEE Aer El* 20(5):574-582, Sep 1984.
- Bowers J. E., Tucker R. S., Burrus C. A., **Six-GHz Direct Frequency Modulation of Cleaved-Coupled-Cavity Channeled-Substrate Buried-Heterostructure Lasers (Letter).** *IEEE J Q El* 20(11):1230-1232, Nov 1984.
- Chen C. Y., Antreasyan A., Cho A. Y., Garbinski P. A., **GaAs Field-Effect Transistors Prepared on Lattice-Mismatched InP Substrates for Monolithic Optoelectronic Integration.** *Electr Lett* 20(21):865-866, Oct 11 1984.
- Dingle R., **New High-Speed III-V Devices for Integrated Circuits.** *IEEE Device* 31(11):1662-1667, Nov 1984.
- Dutta N. K., Napholtz S. G., Wilson R. B., Brown R. L., Cella T., Craft D. C., **High-Power Gain-Guided InGaAsP Laser Array.** *Appl Phys L* 45(9):941-943, Nov 1 1984.
- Dutta N. K., Nelson R. J., Wilson R. B., Maher D. M., Wright P. D., Sheng T. T., Lin P. S. D., Marcus R. B., **Effect of Active Layer Placement on the Threshold**

Current of 1.3- μm InGaAsP Etched Mesa Buried Heterostructure Lasers. Appl Phys L 45(4):337-339, Aug 15 1984.

Edelson D., Flamm D. L., **Computer Simulation of a CF_4 Plasma Etching Silicon.** J Appl Phys 56(5):1522-1531, Sep 1 1984.

Franey J. P., Graedel T. E., Gualtieri G. J., Kammlott G. W., Malm D. L., Sharpe L. H., Tierney V., **Conductive Silver Epoxy Pastes—Characteristics of Alternative Formulations.** J Mater Sci 19(10):3281-3286, Oct 1984.

Georgiou G. E., Jankoski C. A., Palumbo T. A., **DC Electroplating of Sub-Micron Gold Patterns on X-Ray Masks.** P Soc Photo 471:96-102, 1984.

Glass A. M., **Materials for Optical Information Processing.** Science 226(4675):657-662, Nov 9 1984.

Gossard A. C., **New Electronic Phenomena Based on Multilayer Epitaxy.** IEEE Device 31(11):1667-1672, Nov 1984.

Hayes J. R., Levi A. F. J., Wiegmann W., **Hot-Electron Spectroscopy.** Electr Lett 20(21):851-852, Oct 11 1984.

Jelinski L. W., **Modern NMR Spectroscopy.** Chem Eng N 62(45):26+, Nov 5 1984.

Koch T. L., Coldren L. A., Bridges T. J., Burkhardt E. G., Corvini P. J., Miller B. I., Wilt D. P., **Low-Threshold High-Speed 1.55- μm Vapor-Phase Transported Buried Heterostructure Lasers (VPTBH).** Electr Lett 20(21):856-857, Oct 11 1984.

Korotky S. K., Eisenstein G., Kasper B. L., Alferness R. C., Veselka J. J., Buhl L. L., **Error-Free External Modulation of a Single-Frequency Injection Laser at 1.5 GBit/s Using a Ti-LiNbO₃ Wave-Guide Switch.** Electr Lett 20(21):878-879, Oct 11 1984.

Lines M. E., **The Search for Very Low-Loss Fiber-Optic Materials.** Science 226(4675):663-668, Nov 9 1984.

Meloni A., Gregori G. P., Lanzerotti L. J., Medford L. V., **Search for a Possible Electromagnetic Coupling Between a Transatlantic Communication Cable and the Magma Chamber in the Mid-Atlantic Ridge.** J Geophys 55(3):185-190, 1984.

Olsson N. A., Tsang W. T., Logan R. A., **Active Spectral Stabilization of Cleaved-Coupled-Cavity (C⁸) Lasers.** J Light T 2(1):49-51, Feb 1984.

Raack G. A., Sable E. G., Stewart R. J., **Customer Control of Network Services.** IEEE Comm M 22(10): 8-14, Oct 1984.

Silberberg Y., Smith P. W., Eilenberger D. J., Miller D. A. B., Gossard A. C., Wiegmann W., **Passive-Mode Locking of a Semiconductor Diode Laser.** Optics Lett 9(11):507-509, Nov 1984.

Tsang W. T., **The C-3 Laser.** Sci Am 251(5):149+, Nov 1984.

Vanderziel J. P., Mikulyak R. M., Temkin H., Logan R. A., Dupuis R. D., **Optical Beam Characteristics of Schottky-Barrier Confined Arrays of Phase-Coupled Multiquantum Well GaAs Lasers.** IEEE J Q El 20(11):1259-1266, Nov 1984.

Vanderziel J. P., Temkin H., Logan R. A., Dupuis R. D., **High-Power Picosecond Pulse Generation in GaAs Multiquantum Well Phase-Locked Laser Arrays Using Pulsed Current Injection.** IEEE J Q El 20(11):1236-1242, Nov 1984.

MANAGEMENT/ECONOMICS

Fishburn P. C., **Dominance in SSB Utility Theory.** J Econ Theo 34(1):130-148, Oct 1984.

Fishburn P. C., **Probabilistic Social Choice Based on Simple Voting Comparisons.** Rev Econ S 51(4):683-692, Oct 1984.

PHYSICAL SCIENCES

Abrahams S. C., Ihringer J., Marsh P., Nassau K., **Phase Transition at 434 K, Independent Strain Coupling in Second Transition at 400 K, and Thermal Expansivity in Ferroelastic K₂TeBr₆.** J Chem Phys 81(4):2082-2087, Aug 15 1984.

- Argade P. V. et al., **Confirmation of the Assignment of the Iron Histidine Stretching Mode in Myoglobin.** *J Am Chem S* 106(22):6593-6596, Oct 31 1984.
- Argade P. V., Ching Y. C., Rousseau D. L., **Cytochrome a_3 Structure in Carbon Monoxide-Bound Cytochrome Oxidase.** *Science* 225(4659):329-331, Jul 20 1984.
- Bates F. S., Bair H. E., Hartney M. A., **Block Copolymers Near the Microphase Separation Transition. 1. Preparation and Physical Characterization of a Model System.** *Macromolec* 17(10):1987-1993, Oct 1984.
- Bosch M. A., Haller H. R., Schiavone L. M., Shay J. L., **Reactively Sputtered TeN_x Optical-Recording Media.** *Appl Phys L* 45(3):202-204, Aug 1 1984.
- Brummell M. A., Nicholas R. J., Brunel L. C., Huant S., Baj M., Portal J. C., Razeghi M., Di Forte-Poisson M. A., Cheng K. Y., Cho A. Y., **Cyclotron Resonance and Polaron Effects in a Two-Dimensional Electron-Gas in GaInAs .** *Surf Sci* 142(1-3):380-387, Jul 1984.
- Capasso F., Mohammed K., Alavi K., Cho A. Y., **Impact Ionization Rates for Electrons and Holes in $\text{Al}_{0.48}\text{In}_{0.52}\text{As}$.** *Appl Phys L* 45(9):968-970, Nov 1 1984.
- Chabal Y. J., Patel C. K. N., **Solid Hydrogen in Amorphous Silicon—Phase Transition.** *Phys Rev L* 53(18):1771-1774, Oct 29 1984.
- Childs T. T., Royer W. A., Smith N. V., **Evaluation of LIF Lenses as Monochromators for Inverse Photoemission Spectroscopy.** *Rev Sci Ins* 55(10):1613-1615, Oct 1984.
- Davis G. P., Moore C. A., Gottscho R. A., **Nascent Product Time of Flight Distributions From Laser Initiated Etching of Germanium by Bromine.** *P Soc Photo* 459:115-120, 1984.
- Dimauro L. F., Heaven M., Miller T. A., **Laser-Induced Fluorescence Study of the $\text{B}^2\text{A}'' \rightarrow \text{X}^2\text{A}''$ Transition of the Vinyloxy Radical in a Supersonic Free Jet Expansion.** *J Chem Phys* 81(5):2339-2346, Sep 1 1984.
- Duncan T. M., Douglass D. C., **On the ^{31}P Chemical Shift Anisotropy in Condensed Phosphates.** *Chem Phys* 87(3):339-349, Jul 1 1984.
- Dupuis R. D., **Metalorganic Chemical Vapor-Deposition of III-V Semiconductors.** *Science* 226(4675):623-629, Nov 9 1984.
- Dutt B. V., Chin A. K., Camlibel I., Bonner W. A., **Influence of Ambient Media on the Out-Diffusion of S From InP:S .** *J Appl Phys* 56(6):1630-1635, Sep 15 1984.
- Ekin J. W., Hong M., **Electromechanical and Metallurgical Properties of Liquid-Infiltration Nb-Ta/Sn Multifilamentary Superconductor.** *Appl Phys L* 45(3):297-299, Aug 1 1984.
- Evans T. E., Valanju P. M., Benesch J. F., Bengston R. D., Li Y. M., Mahajan S. M., Oakes M. E., Ross D. W., Wang X. Z., Watkins J. G., **Direct Observation of the Structure of Global Alfvén Eigenmodes in a Tokamak Plasma.** *Phys Rev L* 53(18):1743-1746, Oct 29 1984.
- Feldman L. C., **Ion-Scattering Analysis of Interfaces.** *Ultramicros* 14(1-2):51-54, 1984.
- Gerin M., Combes F., Encrenaz P., Linke R., Destombes J. L., Demuyneck C., **Detection of ^{13}CN in Three Galactic Sources (Letter).** *Astron-Astr* 136(2):L 17-L 20, Jul 1984.
- Gibson J. M., **High-Resolution Electron Microscopy of Interfaces Between Epitaxial Thin Films and Semiconductors.** *Ultramicros* 14(1-2):1-10, 1984.
- Gibson J. M., **Uniqueness of Surface Images (Letter).** *Phys Rev L* 53(19):1859, Nov 5 1984.
- Goodby J. W., **Liquid Crystal Phases Exhibited by Some Monosaccharides.** *Molec Cryst* 110(1-4):205-219, 1984.
- Goodby J. W., Leslie T. M., **Ferroelectric Liquid Crystals—Structure and Design.** *Molec Cryst* 110(1-4):175-203, 1984.
- Helfand E., **Dynamics of Conformational Transitions in Polymers.** *Science* 226(4675):647-650, Nov 9 1984.
- Henkel C., Wilson T. L., Johnston K. J., **Ammonia Absorption Toward NGC 7538 IRS 1:2 ARC Second Observations in the (3,3) Line.** *Astrophys J* 282(2):L93-L96, Jul 15 1984.
- Jackel J. L., Rice C. E., **Short-Term and Long-Term Stability in Proton Exchanged Lithium-Niobate Wave-Guides.** *P Soc Photo* 460:43-48, 1984.
- Katz H. E., **Macrocyclic Bipyridines for Alkyltin Trichloride Deactivation.** *Tetrahedr L* 25(43):4905-4908, 1984.

- Kevan S. D., Dubois L. H., **Development of Dispersion Compensation for Use in High-Resolution Electron-Energy-Loss Spectroscopy.** *Rev Sci Ins* 55(10):1604-1612, Oct 1984.
- Kotliar G., Sompolinsky H., **Phase Transition in a Dzyaloshinsky-Moriya Spin Glass.** *Phys Rev L* 53(18):1751-1754, Oct 29 1984.
- Lambert W. R., Cardillo M. J., Trevor P. L., Doak R. B., **Inelastic Helium Scattering From the Ag(001) and Ag(001)C(2×2)Cl Surfaces.** *Surf Sci* 145(2-3): 519-543, Oct 1984.
- Lanzerotti L. J., Brown W. L., Marcantonio K. J., Johnson R. E., **Production of Ammonia-Depleted Surface Layers on the Saturnian Satellites by Ion Sputtering.** *Nature* 312(5990):139-140, Nov 8 1984.
- Leung S. Y., Schumaker N. E., **Layer Thickness Uniformity in Liquid-Phase Epitaxy—A Two-Dimensional Diffusion Analysis.** *J Cryst Gr* 67(3):458-466, Aug 1984.
- Lovinger A. J., Cais R. E., **Structure and Morphology of Poly(Trifluoroethylene).** *Macromolec* 17(10):1939-1945, Oct 1984.
- Macrander A. T., Seidman D. N., **An Atom-Probe Field-Ion Microscope Study of 200-eV⁺H₂⁺ Ions Implanted in Tungsten at 29 K.** *J Appl Phys* 56(6):1623-1629, Sep 15 1984.
- Marcus M. A., **Interaction of Micellar Additions With Thermotropic Liquid Crystals.** *Molec Cryst* 110(1-4):145-152, 1984.
- McRae E. G., Gossman H. J., Feldman L. C., **Structural Analogy Between GeSi (111)-5×5 and Si (111)-7×7 Surfaces (Letter).** *Surf Sci* 146(1):L540-L546, Oct 1984.
- Milshtein S. K., Joy D. C., Ferris S. D., Kimerling L. C., **Defect Characterization Using SEM-CCM—Relative Contrast Measurements.** *Phys St S-A* 84(2):363-369, Aug 16 1984.
- Narayanamurti V., **Crystalline Semiconductor Heterostructures.** *Phys Today* 37(10):24-32, Oct 1984.
- Nassau K., **Early History of Lithium-Niobate—Personal Reminiscences.** *P Soc Photo* 460:2-5, 1984.
- Nassau K., Lines M. E., **Calculation of Scattering and Other Parameters for Ultra Low-Loss Optical Fibers.** *P Soc Photo* 484:7-13, 1984.
- Rosamilia J. M., Miller B., **Hydrodynamic Modulation Applications to Electroanalysis and Diffusion-Coefficient Measurement With a Commercial Disk Rotator.** *Analyt Chem* 56(13):2410-2413, Nov 1984.
- Ryan J. F. et al., **Time-Resolved Photoluminescence of Two-Dimensional Hot Carriers in GaAs-AlGaAs Heterostructures.** *Phys Rev L* 53(19):1841-1844, Nov 5 1984.
- Schlesinger Z., Hwang J. C. M., Allen S. J., Le H., **Infrared Studies of the GaAs/(GaAl)As Two-Dimensional Electron Gas.** *Surf Sci* 142(1-3):423-426, Jul 1984.
- Schluter M., **Bonding Geometries at Semiconductor Surfaces and Interfaces.** *Ultramicros* 14(1-2):89-96, 1984.
- Schneemeyer L. F., Disalvo F. J., Fleming R. M., Waszczak J. V., **Sliding Charge-Density Wave Conductivity in Potassium Molybdenum Bronze.** *J Sol St Ch* 54(3):358-364, Oct 1984.
- Schwartz G. P., Thiel F. A., Gualtieri G. J., **Thermal Oxidation of InAs_xP_{1-x}.** *J Vac Sci A* 2(3):1252-1256, Jul-Sep 1984.
- Selke W., Huse D. A., Kroll D. M., **Interfacial Adsorption in the Two-Dimensional Blume-Capel Model.** *J Phys A* 17(15):3019-3027, Oct 21 1984.
- Stone J., Burrus C. A., Wiesenfeld J. M., **On the Origin of the Long-Wavelength Loss Anomaly in H₂-Treated Germano-Phospho-Silicate Glass Fibers.** *Appl Phys L* 45(3):212-214, Aug 1 1984.
- Stucki F., Anderson J., Lapeyre G. J., Farrell H. H., **Multiple Vibrational Excitations of H₂O and D₂O on Si (100) (2×1): A Hreels Study.** *Surf Sci* 143(1):84-92, Jul 1984.
- Temkin H., Panish M. B., Logan R. A., van der Ziel J. P., **λ ≈ 1.5 μm InGaAsP Ridge Lasers Grown by Gas Source Molecular Beam Epitaxy.** *Appl Phys L* 45(4):330-332, Aug 15 1984.
- Tonelli A. E., Schillinger F. C., **C-13 NMR Chemical Shifts and the Microstructure**

of Propylene Vinyl-Chloride Copolymers With Low Propylene Content. *Macromolec* 17(10):1946-1949, Oct 1984.

Vandover R. B., Bacon D. D., Sinclair W. R., **Preparation of NBN by Reactive Magnetron Sputtering Using NE and KR Inert Diluents.** *J Vac Sci A* 2(3):1257-1260, Jul-Sep 1984.

SOCIAL AND LIFE SCIENCES

Bosch M. A., **Optical Recording.** *Sem Semimet* 21(PD):173-207, 1984.

Bradley D. R., Dumais S. T., **The Effects of Illumination Level and Retinal Size on the Depth Stratification of Subjective Contour Figures.** *Perception* 13(2):155-164, 1984

Brams S. J., Fishburn P. C. **Proportional Representation in Variable-Size Legislatures.** *Soc Choice* 1(3):211-229, 1984.

Fishburn P. C., Gehrlein W. V., **Powers of Subgroups in Voting Bodies.** *Soc Choice* 1(2):85-95, 1984.

Starr S. J., **Effects of Video Display Terminals in a Business Office.** *Human Fact* 26(3):347-356, Jun 1984.

SPEECH/ACOUSTICS

Andrews H. L., **Speech Processing.** *Computer* 17(10):315-324, Oct 1984.

Lin D. W., **On Digital Implementation of the Fast Kalman Algorithms.** *IEEE Acoust* 32(5):998-1005, Oct 1984.