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- single-chip four-bit monolithic X-band phase shifter; chip layout and fabrication. *Wilson, K.*, +, *T-MTT Dec 85* 1572-1578

Integrated-circuit fabrication; cf. Integrated-circuit bonding; Integrated-circuit ion implantation; Integrated-circuit packaging; Laser applications, materials processing; Specific topic or device

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- air bridge gate FET for GaAs monolithic circuits. *Bastida, E. M.*, +, *MWSYM 85* 63-67
- automated interconnect on GaAs integrated circuits; ball bonding techniques. *Pavio, J. S.*, +, *MWSYM 86* 423-426
- characterization method and simple design formulas for MMIC microwave coplanar strip interconnection lines. *Yamashita, E.*, +, *MWSYM 87 Vol. 2* 685-688
- finite-element analysis of skin effect in copper interconnects at 77 K and 300 K. *Ghoshal, U. S.*, +, *MWSYM 88 Vol. 2* 773-776
- multilayer interconnection lines for high-speed digital integrated circuits; general analysis method. *Fukuoka, Y.*, +, *T-MTT Jun 85* 527-532
- on-chip pulse delay and crosstalk on interconnections of very high speed LSI/VLSI. *Hasegawa, H.*, +, *MCS 84* 29-33
- optical interconnection between active semiconductor components in semiconductor integrated optical circuits; low-loss passive dielectric waveguides fabricated by deposition and spin coating. *Furuya, K.*, +, *T-MTT Oct 82* 1771-1777
- proximity effects between microstrip lines and ground on MMIC: estimation using boundary division method. *Yamashita, E.*, +, *T-MTT Dec 87* 1355-1362
- signal lines between pair of mesh reference planes in homogeneous dielectric; propagation characteristics. *Rubin, B. J.*, *T-MTT May 84* 522-531
- spectral Galerkin method for microstrip multiconductor coupling of VLSI interconnections. *Farr, E. G.*, +, *T-MTT Feb 86* 307-310
- surface-to-surface transition via electromagnetic coupling of coplanar waveguides. *Jackson, R. W.*, +, *T-MTT Nov 87* 1027-1032
- time-domain transient analysis of partially coupled lines; application to VLSI/VHSIC interconnections. *Razban, T.*, *T-MTT May 87* 530-533
- time response of lossy multiconductor transmission line networks with mutual interconnections and arbitrary linear terminations. *Djordjević, A. R.*, +, *T-MTT Oct 87* 898-908
- via hole on monolithic 2 - 20-GHz distributed amplifier for low-inductance contact. *Yuen, C.*, +, *T-MTT Jul 88* 1191-1195
- VLSI interconnect structures; analysis in terms of coupled microstrip and stripline transmission. *Carin, L.*, +, *MWSYM 87 Vol. 2* 625-628

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Integrated-circuit interconnections; cf. Beam-lead devices**Integrated-circuit ion implantation**

- high-performance X-band MMIC power amplifier fabrication using ion implantation process. Wang, S. K., +, *MCS 86 5-7*
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- ion-implanted low-noise GaAs MESFET and monolithic amplifier. Wang, K.-G., +, *MCS 87 115-117*
- ion-implanted profile's influence on GaAs MESFET and MMIC amplifier performance. Pavlidis, D., +, *T-MTT Apr 88 642-652*
- ion-implanted W-band monolithic balanced mixers for broadband applications. Trinh, T. N., +, *MCS 87 89-92*
- planar ion-implantation process for low-noise GaAs MESFETs in MMIC amplifiers. Wang, K.-G., +, *T-MTT Dec 87 1501-1506*
- 30-GHz monolithic balanced mixers using ion-implanted FET-compatible 3-inch GaAs wafer process technology. Bauhahn, P., +, *MCS 86 45-49*

Integrated-circuit measurements

- calibration methods for microwave wafer probing. Strid, E. W., +, *MCS 84 78-82*
- electrooptic sampling method for microwave measurements of GaAs ICs. Weingarten, K. J., +, *MWSYM 87 Vol. 2 877-880*
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- multiport technique for improving accuracy of wafer probe measurements. Magerko, M. A., +, *MWSYM 88 Vol. 1 241-244*
- picosecond optical reflectometry technique for on-chip characterization of millimeter-wave semiconductor devices. Rauscher, C., *MWSYM 87 Vol. 2 881-884*

Integrated-circuit measurements; cf. Integrated-circuit testing**Integrated-circuit mechanical factors**

- successful alloy attachment of GaAs MMICs. Pavio, J. S., *T-MTT Dec 87 1507-1511*

Integrated-circuit metallization; cf. Integrated-circuit interconnections**Integrated-circuit modeling; cf. Specific topic or device****Integrated-circuit packaging**

- low-cost packaging/testing procedure for manufacturing GaAs MMICs. Esfandiari, R., +, *MCS 87 135-137*
- low-cost packaging/testing procedure for manufacturing GaAs MMICs. Esfandiari, R., +, *MWSYM 87 Vol. 1 229-231*

Integrated-circuit packaging; cf. Integrated-circuit bonding; Thick-film circuit packaging**Integrated circuit radiation effects**

- reliability investigation on S-band GaAs MMIC; accelerated life tests and radiation hardness tests. Katsukawa, K., +, *MCS 87 57-61*

Integrated-circuit reliability

- fully ECL-compatible 2-Gb/s GaAs FET logic ICs; stability and reliability. Hosono, Y., +, *MCS 87 49-52*
- reliability investigation on S-band GaAs MMIC; accelerated life tests and radiation hardness tests. Katsukawa, K., +, *MCS 87 57-61*
- single-pulse RF damage of GaAs FET amplifiers. McAdoo, J. H., +, *MWSYM 88 Vol. 1 289-292*

Integrated-circuit testing

- GaAs integrated circuit testing using electrooptic sampling; microwave circuit measurements. Weingarten, K. J., +, *CORNEL 87 Paper 7*
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- low-cost packaging/testing procedure for manufacturing GaAs MMICs. Esfandiari, R., +, *MWSYM 87 Vol. 1 229-231*

Integrated-circuit testing; cf. Integrated-circuit reliability**Integrated-circuit thermal factors**

- successful alloy attachment of GaAs MMICs. Pavio, J. S., *T-MTT Dec 87 1507-1511*
- temperature characteristics for GaAs monolithic broadband amplifier having resistive loads. Honjo, K., *T-MTT May 84 552-553*

Integrated-circuit thermal factors; cf. Cryogenic materials/devices**Integrated circuits**

- GaAs integrated circuits; joint special issue with *IEEE Transactions on Electron Devices*. *T-MTT Jul 82 933-1026*
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Integrated circuits; cf. Analog integrated circuits; Application-specific integrated circuits; Bipolar integrated circuits; FET integrated circuits; High-speed integrated circuits; Hybrid integrated circuits; Integrated optoelectronics; Microwave integrated circuits; Millimeter-wave integrated circuits; Monolithic microwave integrated circuits; Thin-film circuits; UHF integrated circuits; Very high-speed integrated circuits; Very large-scale integration**Integrated injection logic**

- InP/In_{0.53}Ga_{0.47}As heterojunction bipolar transistors for I²L logic or microwave devices. Schuitemaker, P., +, *CORNEL 85 45-51*

Integrated optics

- dyadic Green's functions for integrated electronic and optical circuits made of layered structures. Bagby, J. S., +, *T-MTT Feb 87 206-210*
- etched mirror and groove-coupled GaInAsP/InP lasers for integrated optics. Coldren, L. A., +, *T-MTT Oct 82 1667-1676*
- integrated-optical single-sideband modulator and phase shifter. Heismann, F., +, *T-MTT Apr 82 613-617*
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Integrated optics; cf. Integrated optoelectronics; Optical planar waveguides**Integrated optoelectronics**

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- double-heterojunction bipolar transistor device fabrication on InP. Svilans, M., *CORNEL 87 Paper 36*
- GaAs/GaAlAs heterojunction bipolar phototransistor for monolithic photoreceiver operating at 140 Mb/s. Wang, H., +, *MWSYM 86 717-719*
- GaAs/GaAlAs heterojunction bipolar phototransistor for monolithic photoreceiver operating at 140 Mbit/s. Wang, H., +, *T-MTT Dec 86 1344-1348*
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- constant intermodulation loci measure for power devices using HP 8510 network analyzer. Ricco, L., +, *MWSYM 88 Vol. 1 221-224*
- GaAs microwave MESFET mixer using time-varying channel resistance for frequency conversion with low intermodulation distortion. Maas, S. A., *T-MTT Apr 87 425-429*
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- Interpolation**
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- Interpolation; cf.** Digital - analog conversion; Piecewise-polynomial approximation
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- Large-signal ...; cf.** Nonlinear ...
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- Ti:LiNbO₃ waveguides coupled between input and output single-mode fibers; fiber-waveguide coupling loss and propagation loss. *Alferness, R. C., +, T-MTT Oct 82 1795-1801*
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- Parametric amplifiers**
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Packaging; cf. Integrated-circuit packaging, Semiconductor device packaging; Thick-film circuit packaging

Packet radio

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Partial differential equations; cf. Boundary-element methods; Finite-element methods; Laplace equations**Particle-beam dynamics**

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PCM; cf. Pulse-code modulation**Periodic functions**

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Periodic media; cf. Nonhomogeneous media**Periodic structures**

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Periodic structures; cf. Arrays; Electromagnetic scattering, periodic structures; Gratings**Periodic surfaces; cf.** Corrugated surfaces; Corrugated waveguides; Gratings**Permeable base transistors**

GaAs permeable base transistor power amplifier; power-added efficiency at 1.3 and 20 GHz. *Nichols, K. B.*, + , *CORNEL 87* Paper 37

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Radio transmitters; cf. Land mobile radio transmitters/receivers; Microwave transmitters; UHF transmitters

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- RF (radio frequency) ...; cf.** *Specific topic or device*
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- nondestructive microwave beam-lead diode measurement. *White, J. F., +, MWSYM 87 Vol. 1* 445-448
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- Thermal variables measurement**
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- Thickness measurement**
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- Thin-film circuits**
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effect of fringing fields on resistance of conducting film between circular disks. *Schwarzbeek, S. M., + , T-MTT Sep 86 977-981. †*

Thin films; cf. Integrated-circuit interconnections; Semiconductor films; Superconducting films

Time-division multiplexing

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Timing jitter

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Tracking loops; cf. Phase-locked loops

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- Waveguides; cf.** Circular waveguides; Coaxial waveguides; Corrugated waveguides; Dielectric-loaded waveguides; Dielectric waveguides; Electromagnetic surface-wave waveguides; Ferrite-loaded waveguides; Finline; Loaded waveguides; Microstrip; Multimode waveguides; Nonhomogeneously loaded waveguides; Parallel-plate waveguides; Plasma-loaded waveguides; Ridge waveguides; Semiconductor-loaded waveguides; Semiconductor waveguides; Slotline; Strip transmission lines; Stripline; Thin-film waveguides; Transmission lines; UHF waveguides

Weapons; cf. Fire-control systems

Wedges

- Monte Carlo method for Dirichlet problem of dielectric wedges. *Schlott, R.*, *T-MTT Apr 88* 724-730

West Germany

- state-of-the-art of MMIC technology and design in West Germany. *Pettenpaul, E.*, *MWSYM 87 Vol. 2* 763-766

Wiener - Hopf theory

- transverse discontinuities in symmetrical three-layer waveguides; surface-wave scattering analysis using Wiener - Hopf theory. *Uchida, K.*, +, *T-MTT Jan 84* 11-19
- waveguide polarizer with resonant notches in septum; design data derived using Wiener - Hopf technique. *Albertsen, N. C.*, +, *T-MTT Aug 83* 654-660

Wire communication cables

- comparison of microwave, coaxial, and lightwave digital transmission technologies. *Jones, J. R.*, *T-MTT Oct 82* 1512-1524

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- transient analysis of single and coupled lines with capacitively loaded junctions. *Gu, Q.*, +, *T-MTT Sep 86* 952-964. †

Wiring; cf. Integrated-circuit interconnections; Printed circuits

Y

Yield optimization

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- circuit yield evaluation of lumped and distributed matching structures for amplifier design. *Purviance, J.*, +, *MWSYM 88 Vol. 1* 375-378
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Yield optimization; cf. Design centering

YIG films/devices

- boundary element method approach to magnetostatic problems; study on YIG waveguides. *Yashiro, K.*, +, *T-MTT Mar 85* 248-253
- insertion loss of magnetostatic surface-wave delay lines using conductor - dielectric - YIG - GGG structure. *Bajpai, S. N.*, +, *T-MTT Jan 88* 132-136
- Ku-band magnetostatic-volume-wave delay line using YIG film on gadolinium gallium garnet substrate. *Willem, D. A.*, +, *MWSYM 86* 477-480
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- magnetostatic-forward-volume-wave straight-edge resonators using rectangular YIG film. *Chang, K.-W.*, +, *MWSYM 86* 473-475
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- magnetostatic surface-wave scattering properties of metal-fingered grating over YIG film. *Cheng, T. S.*, +, *MWSYM 87 Vol. 2* 1001-1004
- magnetostatic wave delay lines using nonuniformity magnetized YIG film. *Tsutsumi, M.*, +, *MWSYM 84* 351-353
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- planar nonhomogeneous waveguides for magnetostatic waves; finite-element solution for layered YIG films. *Long, Y.*, +, *T-MTT Aug 87* 731-736
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- 13-GHz YIG-film-tuned oscillator for VSAT (very small aperture communication terminal) applications. *Mizunuma, Y.*, +, *T-MTT Dec 88* 1885-1889

YIG films/devices; cf. YIG filters

YIG filters

- bandpass filter using YIG film grown by LPE. *Murakami, Y.*, +, *MWSYM 85* 285-288
- electronically tunable microwave bandpass filters. *Hunter, I. C.*, +, *T-MTT Sep 82* 1354-1360
- microwave circuit model for magnetostatic-wave filter. *Stitzer, S. N.*, *MWSYM 88 Vol. 2* 875-878
- 0.5 - 4.0-GHz tunable bandpass filter using YIG film grown by LPE. *Murakami, Y.*, +, *MWSYM 87 Vol. 1* 371-374
- 0.5 - 4.0-GHz tunable bandpass filter using YIG film grown by LPE. *Murakami, Y.*, +, *T-MTT Dec 87* 1197-1198
- 13-channel magnetostatic-wave filterbank. *Adam, J. D.*, +, *MWSYM 88 Vol. 2* 879-882

YIG materials/devices

- broad-band stripline circulators using YIG and Li-ferrite single crystals. *Schloemann, E.*, +, *T-MTT Dec 86* 1394-1400
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- magnetostatic forward volume wave propagation for YIG layer of finite width; radiation reactance and insertion loss calculation. *Weinberg, I. J.*, + , *T-MTT Apr 84* 463-464
- magnetostatic volume-wave delay lines using YIG slab. *Tsutsumi, M.*, + , *T-MTT Jun 81* 583-587
- magnetostatic volume waves in normally magnetized waveguide structure partially filled by YIG slab. *Radmanesh, M.*, + , *MWSYM 87 Vol. 2* 997-1000
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- 2.8- to 18-GHz YIG and Li-ferrite broadband stripline circulators. *Schloemann, E.*, + , *MWSYM 86* 739-742

YIG-tuned oscillators

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YIG tuners

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Yttrium materials/devices; cf. Superconducting materials/devices

Z

Zeros; cf. Poles and zeros

Zone plates; cf. Gratings