

PUBLICATIONS AND PRESENTATIONS

Refereed Publications

1. "Use of tunable, Q-switched, pulsed discharge CO₂ laser to study individual rotational components," L. C. Lee, M. A. Gundersen, and W.L. Faust, *Optics Comm.* **1**, 291 (1970).
2. "Mirror mount for long wavelength lasers," M. A. Gundersen, H.B. Lloyd, and B.W. Poarch, *Rev. Sci. Instru.* **43**, 333 (1972).
3. "Resonance fluorescence in GaP," M. A. Gundersen and W.L. Faust, *J. Appl. Phys.* **44**, 376 (1973).
4. "Quenching and enhancement of fluorescence from bound excitons by far-infrared radiation," M. A. Gundersen and W.L. Faust, *Phys. Rev. B* **7**, 3681 (1973).
5. "A high power pulsed xenon ion laser," M. A. Gundersen and C.D. Harper, *IEEE J. Quantum Electron.* **QE-9**, 1160 (1973).
6. "Construction of a high power xenon ion laser," C.D. Harper and M.A. Gundersen, *Rev. Sci. Instru.* **45**, 400 (1974).
7. "Conversion of 28 micron far-infrared radiation to visible light using bound excitons in CdS," M.A. Gundersen, *Appl. Phys. Lett.* **24**, 591 (1974).
8. "New far-infrared laser lines in N¹⁵H₃," A.H. Bushnell and M.A. Gundersen, *IEEE J. Quantum Electron.* **QE-12**, 260 (1976).
9. "Effect of a small capacitor in parallel with a pulsed CO₂ TEA laser," A.H. Bushnell, M.A. Gundersen, and T.R. Burkes, *IEEE J. Quantum Electron.* **QE-12**, 447 (1976).
10. "Ammonia laser optically pumped with an HF laser," C.R. Jones, M.I. Buchwald, M.A. Gundersen, and A.H. Bushnell, *Opt. Comm.* **24**, 27 (1978).
11. "New HF laser pumped molecular lasers in the middle infrared," A.H. Bushnell, C.R. Jones, M.I. Buchwald, and M.A. Gundersen, *IEEE J. Quantum Electron.* **QE-15**, 208 (1979).
12. "Longitudinal mode control of a CO₂ TE laser by means of intracavity absorbers," R.A. Dougal, C.R. Jones, M.A. Gundersen, and L. Nelson, *Appl. Opt.* **18**, 1311 (1979).
13. "Tunable single-mode operation of a CO₂ TE laser by means of selective absorbers," M.A. Gundersen, R.A. Dougal, C.R. Jones, and J.N. Telle, *IEEE J. Quantum Electron.* **QE-15**, 125 (1979).
14. "Studies of the basic processes responsible for laser-triggered breakdown in gases," P.F. Williams, R.J. Crumley, and M.A. Gundersen, *Journal de Physique C* **40**, 305 (1979).
15. "New infrared laser lines in argon, krypton, and xenon," E. Brown, M.A. Gundersen, and P.F. Williams, *IEEE J. Quantum Electron.* **QE-16**, 683 (1980).
16. "A study of selective absorbers for single mode operation of TEA CO₂ lasers," T.A. Yocom, K. Schoenbach, R.A. Dougal, M.A. Gundersen, and P.F. Williams, *IEEE J. Quantum Electron.* **QE-16**, 1192 (1980).
17. "Electron densities in laser-triggered hydrogen sparks," S.K. Dhali, P.F. Williams, R.J. Crumley, and M.A. Gundersen, *IEEE Trans. Plasma Sci.* **PS-8**, 164 (1980).
18. "Optics at Texas Tech University: learning by doing," J.F. Walkup, P.F. Williams, and M.A. Gundersen, *IEEE Trans. Educ.* **E-23**, 118 (1980).
19. "Simple, powerful, tunable single-mode and mode-locked TEA CO₂ laser," R.A. Dougal, M.A. Gundersen, and P.F. Williams, *Rev. Sci. Instrum.* **53**, 181 (1982).
20. "Efficient infrared upconversion in GaP," M.A. Gundersen, T.A. Yocom, P.G. Snyder, and P.F. Williams, *J. Appl. Phys.* **53**, 1769 (1982).
21. "Formation of metastable species in hydrogen thyratrons," M.A. Gundersen and S. Guha, *J. Appl. Phys.* **53**, 1190 (1982).

22. "Optical processes in the performance and recovery of gas-phase switches," M.A. Gundersen, *Appl. Opt.* **21**, 1486 (1982).
23. "Tunable pump laser stabilization of the CF₄ laser," M.A. Gundersen and T.A. Yocom, *IEEE J. Quantum Electron.* **QE-18**, 1237 (1982).
24. "A simple pulsed HF laser for optical experiments," T.A. Yocom, M.A. Gundersen, and A.H. Bushnell, *Appl. Opt.* **21**, 757 (1982).
25. "A study of discharge processes in hydrogen thyratrons," S. Guha, H. Cole, and M.A. Gundersen, *IEEE Trans. Plasma Sci.* **PS-10**, 309 (1982).
26. "Plasma parameters characteristic of hydrogen thyratrons under steady-state conditions," J.A. Kunc and M.A. Gundersen, *IEEE Trans. Plasma Sci.* **PS-10**, 315 (1982).
27. "New nitrogen related recombination in GaP," P.G. Snyder and M.A. Gundersen, *Phys. Rev. B* **27**, 2539 (1983).
28. "A non-radiative recombination in GaAs_{0.61}P_{0.39}Ge," P.G. Snyder, M.A. Gundersen, C.W. Myles, H.G. Henry, and E.G. Bylander, *J. Phys. Chem. Sol. Technical Note* **44**, 853 (1983).
29. "Scalar transport coefficients for the hydrogen plasma in the cathode-grid region of a thyatron," J.A. Kunc and M.A. Gundersen, *J. Appl. Phys.* **54**, 2761 (1983).
30. "Field emission cathode for high power beams," R. Petr and M.A. Gundersen, *Laser and Particle Beams* **1**, 207 (1983).
31. "A fundamental theory for high power thyratrons I: The electron temperature," J.A. Kunc, S. Guha, and M.A. Gundersen, *Laser and Particle Beams* **1**, 395 (1983).
32. "A fundamental theory for high power thyratrons II: The production of atomic hydrogen and positive ions," J.A. Kunc and M.A. Gundersen, *Laser and Particle Beams* **1**, 407 (1983).
33. "Thyatron operation using helium for high power and high repetition rate applications," S. Guha, C. Braun, J.A. Kunc, and M.A. Gundersen, *IEEE Trans. Electron. Devices* **ED-31**, 992 (1984).
34. "Optical quenching and energy extraction involving metastable and dissociative states in hydrogen," S. Guha, J.A. Kunc, and M.A. Gundersen, *IEEE J. Quantum Electron.* **QE-20**, 504 (1984).
35. "A fundamental theory for high power thyratrons III: The production of radiation," J.A. Kunc, D.E. Shemansky, and M.A. Gundersen, *Lasers and Particle Beams* **2**, 129 (1984).
36. "Modeling of plasma devices for pulsed power," J.A. Kunc and M.A. Gundersen, *Appl. Phys. Lett.* **45**, 31 (1984).
37. "Analytical expressions for H⁺, H₂⁺ and H₃⁺ ion densities in a hydrogen glow discharge," J.A. Kunc and M.A. Gundersen, *Phys. Fluids* **27**, 2862 (1984).
38. "Comparison of calculated and measured GaP:N luminescence spectra," P.G. Snyder, M.A. Gundersen, and C.W. Myles, *J. Lumin.* **31-32**, 448 (1984).
39. "Model for phonon assisted indirect recombination at impurity sites in semi-conductors: A test of impurity wavefunction theories," P.G. Snyder, C.W. Myles, H-H. Dai, and M.A. Gundersen, *Phys. Rev. B. Rapid Comm.* **32**, 2685 (1985).
40. "A semi-empirical formalism for the calculation of deep level wavefunctions in k space," H.H. Dai, M.A. Gundersen, and C.W. Myles, *Phys. Rev. B.* **33**, 8234 (1986).
41. "Measurement of excited-state densities during high-current operation of a hydrogen thyatron using laser-induced fluorescence," D.A. Erwin and M.A. Gundersen, *Appl. Phys. Lett.* **48**, 1773 (1986).
42. "Determination of electric field and electron temperature in the positive column of a high-power hydrogen thyatron from non-intrusive measurements," D.A. Erwin, J.A. Kunc and M.A. Gundersen, *Appl. Phys. Lett.* **48**, 1727 (1986).
43. "Low pressure, light initiated, glow discharge switch for high power applications," G.F. Kirkman and M.A. Gundersen, *Appl. Phys. Lett.* **49**, 494 (1986).

44. "Fundamental processes affecting recovery in hydrogen thyratrons," C. G. Braun, D. A. Erwin and M.A. Gundersen, *Appl. Phys. Lett.* **50**, 1325 (1987).
45. "Phonon assisted indirect recombination of bound excitons in N-doped GaP, including near resonant processes," H. Dai, M.A. Gundersen, C. W. Myles and P. G. Snyder, *Phys. Rev. B* **37**, 1205 (1988).
46. "High power pseudospark and BLT switches," K. Frank, E. Boggasch, J. Christiansen, A. Goertler, W. Hartmann, C. Kozlik, G. Kirkman, C. G. Braun, V. Dominic, M.A. Gundersen, H. Riege and G. Mechtersheimer, *IEEE Trans. Plasma Science* **16** (2), 317 (1988).
47. "Fiber optic triggered high-power low-pressure glow discharge switches," C. G. Braun, W. Hartmann, V. Dominic, G. Kirkman, M. Gundersen and G. McDuff, *IEEE Trans. Electron Devices* **35** (4), 559 (1988).
48. "Flashlamp triggered high power thyatron type switch," G. Kirkman, W. Hartmann, and M.A. Gundersen, *App. Phys. Lett.* **52** (8), 613 (1988).
49. "Optoelectronic bistability in gallium phosphide," M.S. Choi, J.H. Jur, and M. A. Gundersen, *App. Phys. Lett.* **52** (19), 1563 (1988).
50. "Origin of anomalous emission in superdense glow discharge," W. Hartmann and M.A. Gundersen, *Phys. Rev. Lett.* **60** (23), 2371 (1988).
51. "Evidence for large-area superemission into a high current glow discharge," W. Hartmann, V. Dominic, G.F. Kirkman, and M.A. Gundersen, *App. Phys. Lett.* **53** (18), 1699 (1988).
52. "A super-emissive self-heated cathode for high-power applications," W. Hartmann, G. F. Kirkman, V. Dominic, and M.A. Gundersen, *IEEE Trans. Elect. Dev.* **36** (4), 825 (1989).
53. "An analysis of the anomalous high-current cathode emission in pseudospark and back-of-the-cathode lighted thyatron switches," W. Hartmann, V. Dominic, G. F. Kirkman, and M. A. Gundersen, *J. Appl. Phys.* **65** (11), 4388 (1989).
54. "Phonon-assisted recombination in GaAs/AlGaAs multiple-quantum-well structures", H. H. Dai, M. S. Choi, M. A. Gundersen, H. C. Lee, P. D. Dapkus and C.W. Myles, *J. App. Phys.* **66** (6), 2538 (1989).
55. "An optically triggered, glow switch Marx bank," R. Liou, H. Figueroa, Y. Hsu, G. Kirkman, and M. A. Gundersen, *IEEE Trans. Elec. Dev.* **37** (6), 1591 (1990).
56. "A two-component model for the electron distribution function in a high current pseudospark or back-lighted thyatron," H. Bauer, G. Kirkman, and M. A. Gundersen, *IEEE Trans. Plasma Sci.* **18** (2), 237 (1990).
57. "Avalanche breakdown in p-n AlGaAs/GaAs heterojunctions," J. H. Hur, C. W. Myles and M. A. Gundersen, *J. Appl. Phys.* **67** (11), 1 (1990).
58. "High current plasma based electron source," H. R. Bauer and M. A. Gundersen, *Appl. Phys. Lett.* **57** (5), 434 (1990).
59. "Penetration and equilibration of injected electrons into a high-current hydrogen pseudospark-type plasma," H. R. Bauer and M. A. Gundersen, *J. Appl. Phys.* **68** (2), 512 (1990).
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61. "Multiple-gap back-lighted thyratrons for high power applications," T. Y. Hsu, G. Kirkman, and M. A. Gundersen, *IEEE Trans. on Elec. Dev.* **38**, 717 (1991).
62. "Current quenching in the pseudospark," W. Hartmann, G. Kirkman, and M. A. Gundersen, *Appl. Phys. Lett.* **58**, 574 (1991).
63. "Gas-phase pulsed power switches", M. A. Gundersen, *IEEE Trans. Plasma Sci.* **19** (6), 1123 (1991). (Invited).
64. "High current back lighted thyatron switch," G. Kirkman-Amemiya and M. A. Gundersen, *Appl. Phys. Lett.* **60** (3), (1992).

