

---

---

## REFERENCES

---

---

- A. A. Lutman, R. Coffee, Y. Ding, Z. Huang, J. Krzywinski, T. Maxwell, M. Messerschmidt and H. D. Nuhn, "Experimental Demonstration of Femtosecond Two-Color X-Ray Free Electron Lasers," *Phys. Rev. Lett.*, vol. 110, p. 134801, 2013.
- A. A. Zholents, "Laser assisted electron beam conditioning for free electron lasers," *Physical review special topics - accelerators and beams*, vol. 8, p. 050701, 2005.
- A. Barty, J. Kopper and H. N. Chapman, "Molecular Imaging Using X-Ray Free Electron Lasers," *Annu. Rev. Phys. Chem.*, vol. 64, pp. 415-435, 2013.
- A. Gover, A. Faingersh, A. Eliran, M. Volshonok, H. Kleinman, S. Wolowelsky, Y. Yakover, B. Kapilevich, Y. Lasser, Z. Seidov, M. Kanter, A. Zinigrad, M. Einat, Y. Lurie, A. Abramovich, A. Yahalom, Y. Pinhasi, E. Weisman and J. Shiloh, "Radiation measurements in the newtandem accelerator FEL," *Nuclear Instruments and Methods in Physics Research*, vol. A 528, pp. 23-27, 2004.
- A. Gover, H. P. Freund, V. L. Granatstein, J. H. McAdoo and C. M. Tang, Basic design considerations for free electron lasers driven by electron beams from rf accelerators, *Infrared and Millimeter Waves*, K. J. Button Ed. Orlando, FL, 1984, vol. 11, ch. 8.
- A. K. Ganguly and H. P. Freund, "High-Efficiency Operation of Free-Electron-Laser Amplifiers," *IEEE transactions on plasma science*, vol. 16, no. 2, 1988.
- A. R. Harvey, R. W. Johnson and M. E. Morrison, "Production techniques for the paladin free electron laser wiggler magnets," *IEEE Transactions on magnetics*, vol. 24, no. 2, 1988.
- A. S. Gilmour, *Microwave Tubes*, Boston: Artech House, 1986.
- A. Sharma and V. K. Tripathi, "A plasma filled gyrotron pumped free electron laser," *Phys. Plasmas*, vol.3, p. 3116, 1996.
- A. Sharma and V. K. Tripathi, "A whistler pumped free electron laser," *Physics of Fluids*, vol.31, p. 3375, 1988.
- A. Sharma and V. K. Tripathi, "Free Electron Laser in a Stripline Geometry," *IEEE transactions on electron devices*, vol. 37, no. 12, 1990.

- A. Sharma and V. K. Tripathi, "Kinetic theory of a whistler-pumped free electron laser," *Phys. of Fluids*, vol. B-5, no. 1, 1993.
- A. Sharma, "A Review Study on Amplification of X-Ray Free Electron Laser Pulse in Plasma," *Journal of Modern Physics*, vo. 3, pp. 1998-2003, 2012.
- A. V. Savilov, "Stimulated Wave Scattering in the Smith-Purcell FEL," *IEEE Transactions on plasma science*, vol. 29, no. 5, 2001.
- A. Wolski, G. Penn, A. Sessler and J. Wurtele, "Beam conditioning for free electron lasers: Consequences and methods," *Physical review special topics - accelerators and beams*, vol.7, p. 080701, 2004.
- B. G. Danly, G. Bekefi, R. C. Davidson, R. J. Temkin, T. M. Tran, and J. S. Wurtele, "Principles of Gyrotron Powered Electromagnetic Wigglers for Free Electron Lasers," *IEEE journal of quantum electronics*, vol. QE-23, no. 1, 1987.
- B. Liu, W. B. Li and J. H. Chen, "Demonstration of a widely-tunable and fully-coherent high-gain harmonic-generation free-electron laser," *Physical review special topics - accelerators and beams*, vol. 16, p. 020704, 2013.
- B. Mahieu, E. Allaria, D. Castronovo, M. B. Danailov, A. Demidovich, G. D. Ninno, S. D. Mitri, W. M. Fawley, E. Ferrari, L. Frohlich, D. Gauthier, L. Giannessi, N. Mahne, G. Penco, L. Raimondi, S. Spampinati, C. Spezzani, C. Svetina, M. Trovo and M. Zangrando, "Two-colour generation in a chirped seeded Free-Electron Laser," *Physics optics*, vol. 1, p. 1470, 2013.
- B. Maraghechi and S. Babaei, "Comparison between kinetic and fluid description of plasma loaded free electron laser," Report: Proceedings of FEL, MOPPH011, Novosibirsk, Russia, 2007.
- B. N. Murdin, "Far-infrared free electron lasers and their applications," Report: Advanced Technology Institute, University of Surrey, Guild Ford, and England.
- B. Piosczyk, O. Braz, G., Dammertz, C. T. Iatrou, S. Illy, M. Kuntze, G. Michel, and M. Thumm, "165 GHz, 1.5 MW-coaxial cavity gyrotron with depressed collector," *IEEE Trans. Plasma Sci.*, vol. 27, pp. 484-489, 1999.
- B. Qian, Y. G. Liu, C. Li, "Plasma loaded free electron laser with an electromagnetic wave wiggler and axial guide field," *Physics of Plasmas*, vol.1, p. 4089, 1994.
- B. Sonntag, "VUV and X-ray free-electron lasers," *Nuclear Instruments and Methods in Physics Research*, vol. 467-468, p. 8-15, 2001.

- Bellini, “3-D Quantum Theory of free electron lasers,” Ph.D Thesis, Universita Degli Studi, Di Milano, 2008.
- Botao Jia, “Study of Storage Ring Free Electron Laser Using Experimental and Simulation Approaches,” Ph.D. Dissertation, Department of Physics, Duke University, China, 2011.
- C. A. Thomas, “Dynamics of the storage ring free electron laser: theoretical and experimental study of two SRFELs in Europe,” Ph.D. Thesis, Technische Universiteit Eindhoven, 2003.
- C. C. Shih and A. Yariv, “Inclusion of space-charge effects with Maxwell’s equations in the single particle analysis of free electron lasers,” *IEEE J. Quantum Electron.*, 1981.
- C. H. Chen, C. S. Hwang, W. K. Lau, N. Y. Huang, A. P. Lee, M. C. Chou, Y. C. Huang, F. H. Chao, J. Wu and A. Chao, “Preliminary design of THz FEL,” National Synchrotron Radiation Research Centre, HOPE Laboratory and SLAC, 2016.
- C. I. Moore, “Observation of the Transition from Thomson to Compton Scattering in Optical Multiphoton Interactions with Electrons,” Ph. D. Thesis, Department of Physics and Astronomy, The College Arts and Sciences University of Rochester, Rochester, New York, 1995.
- C. Joshi, T. Katsouleas, J. M. Dawson, Y. T. Yan, and J. M. Slater, “Plasma Wave Wigglers for Free Electron Lasers,” *IEEE Journal of quantum electronics*, vol. QE-23, no. 9, 1987.
- C. Pellegrini and J. Stohr, “X-Ray Free Electron Lasers: Principles, Properties and Applications”, Report: UCLA, and SSRL, 1990.
- C. Pellegrini and J. Stohr, “X-ray free-electron lasers-principles, properties and applications,” *Nuclear Instruments and Methods in Physics Research*, vol. A 500, 2003.
- C. Pellegrini and S. Reiche, “Lasers, Free Electron,” Report: Lecture notes, University of California, Los Angeles, CA 90095-1547, USA, 2003.
- C. Pellegrini, “Free electron lasers: Development and Applications,” *Particle Accelerators*, vol. 33, pp. 159-170, 1990.
- C. S. Liu and V. K. Tripathi, Interaction of electromagnetic waves with electron beams and plasmas, World Scientific, 1994.
- C. W. Roberson and P. Sprangle, *Physics Fluids*, vol. B1, no. 3, 1989.
- C.W. Roberson and P. Sprangle, “A review of free electron lasers,” *Physics of Fluids*, vol. B, No. 1, p. 6, 1989.

- D. A. G. Deacon, L. R. Elias, J. M. J. Madey, G. J. Ramian, H. A. Schwettman, and T. I. Smith, "First Operation of a Free-Electron Laser," *Physical review letters*, vol. 38, no. 16, 1977.
- D. B. McDermott, T. C. Marshall, S. P. Schlesinger, R. K. Parker and V. L. Granatstein, "High-Power Free Electron Laser Based on Stimulated Raman Back Scattering," *Physical review letters*, vol. 41, no. 20, p. 1368, 1978.
- D. H. Staelin, A. W. Morgenthaler and J. A. Kong, *Electromagnetic Waves*, Prentice Hall, Englewood Cliffs, New Jersey, 1994.
- D. Prosnitz and J. C. Swingle, "The free electron laser amplifier," Report: E&TR, Lawrence Livermore National Laboratory, Livermore, CA-USA, pp. 20-29, Jan., 1982.
- D. W. Hazelton, B. G. Danly, and D. U. Gubser, "Cryogen free high temperature superconducting magnets for 94 GHz gyrokyklystron-powered radar applications," *Naval Engineers Journal*, vol. 110, no. 1, pp. 117-121, 1998.
- D. W. Workie, *Basic Physical Processes and Principles of Free Electron Lasers*, Lecture Notes-Department of Physics, University of Cincinnati, Cincinnati, Ohio 45221, 2001.
- Di J, Zhu D. J., and Liu S. G., "Electromagnetic field algorithms of CHIPIC code," *J. Univ. Electron. Sci. Technol. China*, vol. 4, no. 4, pp. 485-488, 2005.
- E. Allaria, "Impact of radiator length in the emitted power for a high gain harmonic generation free electron laser," *Physical review special topics-accelerators and beams*, vol. 16, p. 030703, 2013.
- E. L. Saldin, E. A. Schneidmiller and M. V. Yurkov, "Scheme for attophysics experiments at an X-ray SASE FEL," *Optics Communications*, vol. 212, pp. 377-390, 2002.
- E. L. Saldin, E. A. Schneidmiller and M. V. Yurkov, "The Physics of Free Electron Lasers," Springer Verlag Berlin Heidelberg (GmbH), 1999.
- F. F. Chen and C. Joshi, "Nonlinear interactions of CO<sub>2</sub> laser radiation with plasmas," Report: National Science Foundation Grant ECS 80-03558, 1980-81.
- F. Sircilli, A. C. J. Paes, V. A. Serrao and Y. C. D. Polli, "Design of a Hybrid Undulator for Free-Electron Lasers," *IEEE Transactions on plasma science*, vol. 37, no. 5, 2001.
- G. Chen, X. Geng, T. W. Mohamed, H. Xu, Y. Mi, J. Kim and D. E. Kim, "Ar plasma waveguide produced by a low-intensity femtosecond laser," *Optics Communications*, vol. 285, pp. 2627-2631, 2012.

- G. Dattoli and A. Renieri, “free electron lasers,” Report: ENEA, Divisione Fisica Applicata, Centro Ricerche Frascati, CP. 65, Frascati and Rome, Italy 1993.
- G. Dattoli and A. Renieri, A. Torre, “Lectures on the free electron laser theory and related topics,” World scientific publishing Co. Pte. Ltd, 1993.
- G. Dattoli, E. Sabia, L. Ottaviani, S. Pagnutti and V. Petrillo, “Longitudinal dynamics of high gain free electron laser amplifiers,” *Physical review special topics-accelerators and beams*, vol. 16, p. 030704, 2013.
- G. Ingelman and Kai Siegbahn, “The Free Electron Laser: Properties and Prospects,” *Swedish Physical Society journal*, vol. 1, p. 3, 1998.
- G. Mishra, K. P. Maheshwari and G. Praburam, “A Slow Wave Free Electron Laser in a Longitudinal Wiggler Field”, *IEEE Transactions on plasma science*, vol. 21, no. 1, 1993.
- G. P. Saraph, V. L. Granatstein, and W. Lawson, “Design of a single-stage depressed collector for high-power, pulsed gyrokystron amplifiers,” *IEEE Trans. Electron Dev.*, vol. 45, no. 4, pp. 986-990, 1998.
- G. S. Nusinovich, Introduction to the Physics of Gyrotrons, Baltimore, Maryland: Johns Hopkins Univ. Press, 2004.
- G. Stupakov, “Frequency multiplication using coherent radiation of a “snake” beam,” *Physical review special topics-accelerators and beams*, vol. 16, p. 010702, 2013.
- G. Warren, L. Ludeking, K. T. Nguyen, D. Smithe, and B. Goplen, “Advances/ applications of MAGIC and SOS,” in *Proc. AIP. Conf. Comput. Accel. Phys.*, pp. 313-322, 1993.
- Gr. A. A. L. and L. A. Gr., A. N. G. E., “Renoble Anneau Accelérateur Laser,” 2016.
- H. A. Salih, V. K. Tripathi and B. K. Pandey, “Second-Harmonic Generation of a Gaussian Laser Beam in a Self Created Magnetized Plasma Channel,” *IEEE Transactions on plasma science*, vol. 31, no. 3, pp. 324-328, 2003.
- H. Aoyagi, Y. Asano, T. Itoga and N. Nariyama, “Electron beam halo monitor for a compact x-ray free-electron laser,” *Physical review special topics-accelerators and beams*, vol. 16, p. 032802, 2013.
- H. Bohmer, J. Munch and M. Z. Caponi, “A free electron laser experiment,” *IEEE Transactions on Nuclear Science*, vol. NS-26, no. 3, 1979.
- H. Fukuzawa, S. K. Son, K. Motomura and S. Mondal, “Deep Inner-Shell Multiphoton Ionization by Intense X-Ray Free Electron Laser Pulses,” *Physical review letters*, vol. 110, p. 173005, 2013.

- H. Motz, "Applications of the Radiation from Fast Electron Beams," *Journal of Applied Physics*, vol. 22, no. 5, 1951.
- H. Motz, W. Thon and R. N. Whitehurst, *J. Appl. Phys.*, vol. 24, p.826, 1953.
- H. P. Freund and A. K. Ganguly, "Nonlinear Simulation of a High-Power, Collective Free Electron Laser," *IEEE Transactions on plasma science*, vol. 20, no. 3, 1992.
- H. P. Freund and T. M. Antonsen Jr., *Principles of Free Electron Lasers*, Chapman and Hall, 1992, ISBN 978-94-010-5023-4, ISBN 978-3-319-75106-1 (eBook), 2018.
- H. T. Philipp, L. J. Koerner, M. S. Hromalik, M. W. Tate and S. M. Gruner, "Femtosecond Radiation Experiment Detector for X-Ray Free-Electron Laser (XFEL) Coherent X-Ray Imaging," *IEEE Transactions on nuclear science*, vol. 57, no. 6, 2010.
- J. B. Pelka, K. R. Tybor, R. Nietubyc and G. Wrochna, "Applications of Free Electron Lasers in Biology and Medicine," *ACTA PHYSICA POLONICA*, Proceedings of the XLIVth Zakopane School of Physics, Zakopane, 2010, vol. 117, no. 2.
- J. Blau, K. Cohn, W. B. Colson and R. Vigil, "Free electron lasers in 2013," Proceedings of FEL, New York, NY, USA, pp. 486-490, 2013.
- J. E. Walsh, "Cerenkov and Cerenkov-Raman radiation sources, in free electron generators of coherent radiation," *Physics of Quantum Electron*, vol. 7, eds. S.F. Jacobs, H.S. Pilloff, M. Sargent III, M.O. Scull, R. Spitzer, *Addison Wesley*, p. 255, 1980.
- J. F. Darke, P. K. Kaw, Y. C. Lee, G. Schmid, C. S. Liu, and M. N. Rosenbluth, "Parametric instabilities of electromagnetic waves in plasmas," *Physics of Fluids*, vol. 17, p. 778, 1974.
- J. Gardelle, J. Labrousche, and P. Le Taillandier, "Free electron laser simulations: Effects of beam quality and space charge," *Physical Review*, vol. 50, no. 6, 1994.
- J. J. Choi, "A high-gain, 28GHz gyrokystron amplifier," *Int. J. Infrared Millimeter Waves*, vol. 19, no. 12, pp. 1681-1691, 1998.
- J. J. Choi, "Design of a temperature limited single-anode magnetron-injection-gun," *Int. J. Infrared Millimeter Waves*, vol. 20, no. 2, pp. 239-252, 1999.
- J. J. Choi, A. H. McCurdy, F. N. Wood, R. H. Kyser, J. P. Calame, K. T. Nguyen, B. G. Danly, T. M. Antonsen, B. Levush, and R. K. Parker, "Experimental investigation of a high power, two-cavity, 35 GHz gyrokystron amplifier," *IEEE Trans. Plasma Sci.*, 26, 3, 1998.
- J. M. J. Madey, "Relationship between mean radiated energy and spontaneous power spectrum in a free electron laser," *Nuov. Cim.*, vol. 50-B, p. 64, 1979.

- J. M. J. Madey, *Journal of Applied Physics*, vol. 42, p. 1906, 1971.
- J. Petillo, Mankofsky A., Krueger W., Kostas C., Mondelli A, and Drobot A, “Applications of the ARGUS code in accelerator physics,” in *Proc. AIP Conf. Comput. Accel. Phys.*, pp. 303-312, 1993.
- J. R. Schneider, “Free Electron Laser Projects at DESY-Examples of Science at FLASH,” *The Japanese Society for Synchrotron Radiation Research*, vol. 20 no. 4, pp. 219-225, 2007.
- J. R. Sirigiri, A Review of Free Electron Laser Theory, Ph. D. Thesis, Electrical Engineering and Computer Science, Massachusetts Institute of Technology, Cambridge, 2001.
- J. R. Taylor, C. D. Zafiratos and M. A. Dubson, *Modern Physics for Scientists and Engineers*, Prentice Hall (2nd ed.), 2004, pp. 136-139, ISBN 0-13-805715-X.
- J. T. Lefevre, G. Marchese, J. L. Rullier and J. T. Donohue, “Measurements of Microwave Power and Frequency in a Pulsed Free Electron Laser Amplifier,” *IEEE Transactions on plasma science*, vol. 25, no. 6, 1997.
- J. W. Pourkey and A. J. Toepfer, “Theory of superpinched relativistic electron beams,” *Physics of Fluids*, vol. 17, p. 1582, 1974.
- K. H. Pae and S. J. Hahn, “Compact-Sized IR Source Using Electromagnetic Wave Wigglers,” *Journal of the Korean Physical Society*, vol. 40, no. 5, pp. 832-836, 2002.
- K. K. Pant and V. K. Tripathi, “Free Electron Laser Operation in the Whistler Mode,” *IEEE Transactions on plasma science*, vol. 21, no. 1, 1994.
- K. K. Pant and V. K. Tripathi, “Nonlocal theory of a whistler pumped free electron laser,” *Physics of Plasmas*, vol.1, p.1025, 1994.
- K. T. Nguyen *et al.*, “Modeling of gyrokystrons with MAGY,” *IEEE Trans. Plasma Sci.*, vol. 28, no. 3, 2013.
- L. K. Grover and R. H. Pantell, “Simplified analysis of free electron lasers using Madey’s theorem,” *IEEE J. Quantum Electron.*, vol. QE-21, p. 944, 1985.
- L. R. Elias, W. M. Fairbank, J. M. J. Madey, H. A. Schwettman and T. I. Smith, “Observation of Stimulated Emission of Radiation by Relativistic Electrons in a Spatially Periodic Transverse Magnetic Field,” *Physical review letters*, vol. 36, no. 13, 1976.
- L. Schachter, *Beam-wave interaction in periodic and quasi periodic structures*, Springer-Verlag, Berlin Heidelberg (2<sup>nd</sup> edition), New York, 2011.

- Lalita, V. K. Tripathi and P. C. Agarwal, "Radiation Guiding in a Plasma Wave Wiggler Free Electron Laser," *IEEE Transactions on plasma science*, vol. 19, no. 1, 1991.
- M. Asakawa, N. Sakamoto, N. Inoue, T. Yamamoto and K. Mima, "Experimental study of a waveguide free electron laser using the coherent synchrotron radiation emitted from electron bunches," *Appl. Phys. Lett.*, vol. 64, no. 13, pp. 1601, 1994.
- M. Cecere and T. C. Marshall, "A Free Electron Laser Experiment on Angular Steering," *IEEE Transactions on plasma science*, vol. 22, no. 5, 1994.
- M. Cooper, X-Ray Compton Scattering, OUP, Oxford, 2013, ISBN: 978-0-19-850168-8.
- M. G. Kong, "Mode-Selective Amplification in a Waveguide Free Electron Laser with a Two-Sectioned Wiggler," *IEEE Transactions on plasma science*, vol. 27, no. 3, 1999.
- M. J. Burns, B. Kulke, G. A. Deis, R. W. Frye, J. S. Kallman, C. W. Ollis, G. C. Tyler, R. D. V. Maren and W. C. Weiss, "The Livermore free electron laser program magnet test laboratory," *IEEE Transactions on magnetics*, vol. 24, no. 2, 1988.
- M. V. Kartikeyan, E. Borie, and M. Thumm, Gyrotrons: High-Power Microwave and Millimeter Wave Technology, Germany: Springer, 2004.
- M. V. Swati, M. S. Chauhan, and P. K. Jain, "Design Methodology and Beam-Wave Interaction Study of a Second-Harmonic D-Band Gyrokystron Amplifier", *IEEE Transactions on plasma science*, vol. 44, no. 11, p. 2845, 2016.
- M. Vogt, B. Faatz, J. Feldhaus, K. Honkavaara, S. Schreiber and R. Treusch, "The free electron laser FLASH at DESY," Proceedings of IPAC, Shanghai, China, pp. 1167-1169, 2013.
- MAGIC User's Manual-2007, ATK Mission Systems, Newington, Virginia, 2007.
- N. Balal, I. V. Bandurkin, V. L. Bratman, E. Magory, A. V. Savilov, "Negative-mass mitigation of Coulomb repulsion for terahertz undulator radiation of electron bunches," *Appl. Phys. Lett.* vol. 107, no. 163505, 2015.
- N. Balal, I. V. Bandurkin, V. L. Bratman, A. E. Fedotov, "Helical undulator based on partial redistribution of uniform magnetic field," *Physical Review Accelerators and Beams* vol. 20, no. 122401, 2017.
- N. S. Ginzburg, E. R. Kocharovskaya, "Quasilinear theory of terahertz free electron lasers based on Compton scattering of incoherent pump wave by intense relativistic electron beam," *Physical review-accelerators and beams*, vol. 19, no. 080701, 2016.



- O. C. Dziewiecka, J. Lorkiewicz and H. G. Wrochna, "POLFEL-Polish free electron laser," Project Description-National Centre for Nuclear Research, Otwock, Poland, 2012.
- P. Baxevanis, R. D. Ruth and Z. Huang, "General method for analyzing three-dimensional effects in free electron laser amplifiers," *Physical review special topics-accelerators and beams*, vol. 16, p. 010705, 2013.
- P. Christillin, "Nuclear Compton scattering," *J. Phys. G: Nucl. Phys.*, vol. 12, 1986.
- P. Emma, K. Bane, M. Cornacchia, Z. Huang, H. Schlarb, G. Stupakov and D. Walz, "Femtosecond and Subfemtosecond X-Ray Pulses from a Self-Amplified Spontaneous Emission Based Free Electron Laser," *Physical review*, vol. 92, no. 7, pp. 074801, 2004.
- P. G. O. Shea and H. P. Freund, "Free Electron Lasers: Status and Applications," vol. 292, pp. 1853-1858, 2001.
- P. Luchini and H. Motz, *Undulators and Free Electron Lasers*, Clarendon Press, Oxford, 1990, p. 108.
- P. Sprangle, R. A. Smith and V. L. Granatstein, "Free Electron Lasers and Stimulated Scattering from Relativistic Electron Beams," *Infrared and Millimeter Waves, Academic Press Inc.*, vol.1, 1979.
- P. Uddholm, J. E. Willett and S. Bilikmen, "free electron laser with longitudinal wiggler and finite axial magnetic field," *Appl. Phys.*, vol. 24, p. 1278-1287, 1991.
- R. A. Jong, E. T. Scharlemann and W. M. Fawley, "Wiggler taper optimization for free electron laser amplifiers with moderate space-charge effects," *Nuclear Instruments and Methods in Physics Research*, vol. A272, p. 99-105, 1988.
- R. A. Kehs, Y. Carmel, V. L. Granatstein and W. W. Destler, "Free Electron Laser Pumped by a Powerful Travelling Electromagnetic Wave," *IEEE Transactions on plasma science*, vol. IX. no. 3, pp. 437-446, 1990.
- R. Heidinger, G. Dammertz, A. Meier, and M. K. Thumm, "CVD diamond windows studied with low-and high-power millimeter waves," *IEEE Trans. Plasma Sci.*, vol. 30, no. 3, pp. 800-807, 2002.
- R. K. Jarwal, A. K. Sharma and V. K. Tripathi, "Feasibility of a Plasma-Filled Inverse Free Electron Laser Accelerator," *IEEE Transactions on plasma science*, vol. 27, no. 3, 1999.
- R. K. Parker B. H. Jackson, S. H. Gold, H. P. Freund, V. L. Granatstein, P. C. Efthimion, M. Herndon, and A. K. Kinhead, "Axial Magnetic-Field Effects in a Collective-Interaction Free Electron Laser at Millimeter Wavelengths," *Physical Review Letters*, vol. 48, no. 4, 1982.

- R. L. Williams, C. E. Clayton, C. Joshi and T. C. Katsouleas, "Studies of Classical radiation Emission from Plasma Wave Undulators," *IEEE Transactions on plasma science*, vol. 21, no. 1, p.156, 1993.
- R. M. Phillips, "The Ubitron, a high power traveling-wave tube based on a periodic beam interaction on Electron Devices," *IRE Transactions on Electron Devices* vol. ED-7, p. 231, 1960.
- R. Stoner, S. C. Chen and G. Bekefi, "A planar electromagnet Microwiggler for Free electron lasers," *IEEE Transactions on plasma science*, vol. IX. no. 3, 1990.
- R.P. Mansfield, "High energy solid state and free electron laser systems in tactical aviation," Ph.D. Thesis, Naval Postgraduate School Monterey, California, 2005.
- S. Babaei and B. Maraghechi, "Plasma-loaded free electron laser with thermal electron beam and background plasma," *Physics of Plasmas*, vol.15, Id. 013102, 1994.
- S. C. Sharma and V. K. Tripathi, "Upper Hybrid Wave Pumped Free Electron Laser," *IEEE Transactions on plasma science*, vol. 23, no. 4, 1995.
- S. D. Mitri, D. Castronovo, I. Cudin and L. Frohlich, "Electron slicing for the generation of tunable femtosecond soft x-ray pulses from a free electron laser and slice diagnostics," *Physical review special topics-accelerators and beams*, 16, 2013.
- S. E. Tsimring, *Electron beams and microwave vacuum electronics*, vol. 191, John Wiley & Sons, 2006.
- S. H. Gold, D. L. Hardesty, A. K. Kinkead, L. R. Barnett and V. L. Granatstein, "High gain 35-GHz free electron laser amplifier experiment," *Physical review letters*, vol. 52, no. 14, p. 1218-1221, 1984.
- S. H. Gold, H. P. Freund and Bowie, "Free electron laser with tapered axial magnetic field," The United States of America as represented by the Secretary of the Navy, Washington, DC, Patent Number: 4,644,548, 1987.
- S. H. Gold, W. M. Black, H. P. Freund, V. L. Granatstein and A. K. Kinkead, "Radiation growth in a millimetre wave free electron laser operating in the collective Regime," *Physics of Fluids*, vol. 27, no. 3, p. 746-754, 1984.
- S. Khodyachykh, M. Brunken, H. Genz, H. D. Graf, C. Hessler, A. Richter, T. Wesp, V. Asgekar, E. Saldin, E. Schneidmiller and M. Yurkov, "Observation of an FEL efficiency increase caused by magnetic field tapering of the undulator," *Nuclear Instruments and Methods in Physics Research*, vol. A, no. 530, p. 205-216, 2004.

- S. Krinsky, "The Physics and Properties of Free-Electron Lasers," Report: Brookhaven National Laboratory, Upton, NY-11973, 2002.
- S. Krishnagopal, V. Kumar, S. Maiti, S. S. Prabhu and S. K. Sarkar, "Free electron lasers-General articles," *Current science*, vol. 87, no. 8, pp. 1066-1078, 2004.
- S. Kumar, H. S. Kang and D. E. Kim, "For the generation of an intense isolated pulse in hard X-ray region using X-ray free electron laser," *Laser and Particle Beams*, vol. 30, pp. 397-406, 2012.
- S. Kumar, H. S. Kang and D. E. Kim, "Generation of isolated single attosecond hard X-ray pulse in enhanced self-amplified spontaneous emission scheme," *Optics express*, vol. 19, no. 8, p. 7537, 2011.
- S. M. Vinko, O. Ciricosta, B. I. Cho, K. Engelhorn, H. K. Chung, C. R. D. Brown and T. Burian, "Creation and diagnosis of a solid-density plasma with an X-ray free electron laser," *Nature-research letter*, vol. 482, p. 59, 2012.
- S. P. Hau and Riege, "Toward single-particle bioimaging using x-ray free-electron lasers," Report: Lawrence Livermore National Laboratory, P.O. Box 808,7000East Avenue and Livermore CA 94551.
- S. T. Mahmoud, H. D. Pandey and R. P. Sharma, "Cross-focusing Effect of Two Intense Laser Beams on Electron Plasma Wave excitation," *Iraqi J. Laser*, Part A, vol. 1, no. 1, pp. 21-29, 2002.
- S. W. Hwang, H. J. Lee, S. Y. Chung and D. E. Kim, "X-ray Radiation Emitted from the Betatron Oscillation of Electrons in Laser wakefields," *Journal of the Korean Physical Society*, vol. 56, no. 1, pp. 309-314, 2010.
- S. Y. Chung, H. J. Lee, K. Lee and D. E. Kim, "Generation of a few femtosecond keV x-ray pulse via interaction of a tightly focused laser co-propagating with a relativistic electron bunch," *Physical review special topics-accelerators and beams*, vol. 14, 2011.
- T. C. Jin and H. Lee, "Analysis of the ac Free Electron Laser," *IEEE Transactions on plasma science*, vol. IX, no. 3, p. 651, 1999.
- T. C. Marshall, *Free Electron Lasers*, MacMillan, New York, 1985.
- T. H. Chung, H. S. Kim, and J. K. Lee, "Simulation of tapered FEL amplifiers in millimetre and infrared regions," *Nuclear Instruments and Methods in Physics Research*, A, 331, 1993.
- T. J. Orzechowski, B. R. Anderson, W. M. Fawley, D. Prosnitz, E. T. Scharlemann and S. M. Yarema, "High gain and high extraction efficiency from a free electron laser amplifier

- operating in the millimeter wave regime,” *Nuclear Instruments and Methods in Physics Research*, vol. A, no. 250, p. 144-149, 1986.
- T. M. Tran, B. G. Danly, K. E. Kreisler, J. B. Schutkeker and R. J. Temkin, “Optimization of gyrokystron efficiency,” *Phys. Fluids*, vol. 29, no. 4, pp. 1274-1281, 1986.
- T. R. M. Barends, L. Foucar, S. Botha, R. B. Doak, R. L. Shoeman, K. Nass and J. E. Koglin, “De novo protein crystal structure determination from X-ray free electron laser data,” *Nature-research letter*, vol. 505, p. 244, 2014.
- T. S. Chu, B. G. Danly and R. Temkin, *Nucl. Instrum. Methods Phys. Res.*, vol. A 285, p. 246, 1989.
- T. Seggebrock, A. R. Maier, I. Dornmair and F. Gruner, “Bunch decompression for laser-plasma driven free electron laser demonstration schemes,” *Physical review special topics-accelerators and beams*, vol. 16, p. 070703, 2013.
- T. Tschentscher, “Investigation of ultrafast processes using X-ray free-electron laser radiation,” *Chemical Physics*, 2004, vo. 299, pp. 271-276.
- Ted Scharlemann, “Physics of the Free Electron Laser,” Report: E&TR, pp. 11, 1986.
- User’s Manual*, CST-Particle Studio, Darmstadt, Germany, 2013.
- User’s Manual*, CST-Particle Studio, Darmstadt, Germany, 2014.
- V. K. Tripathi and C. S. Liu, “A Slow Wave Free Electron Laser,” *IEEE Transactions on plasma science*, vol. 17, no. 4, 1989.
- V. K. Tripathi and C. S. Liu, “Plasma Effects in a Free Electron Laser,” *IEEE Transactions on plasma science*, vol. 18, no. 3, 1990.
- V. K. Tripathi, “Lectures on Free Electron Laser and Energy Gain,” NPTL, India, 2013.
- V. K. Tripathi, R. N. Agarwal, Ghanshyam and P. C. Agarwal, “Plasma-Aided Radiation Guiding in a Free-Electron Laser,” *IEEE Transactions on plasma science*, vol. 24, no. 4, 1996.
- V. L. Granatstein, P. Sprangle, R. K. Parker, J. Pasour, M. Herndon and S. P. Schlesinger, “Realization of a relativistic mirror: Electromagnetic backscattering from the front of a magnetized relativistic electron beam,” *Physical review letters*, vol. 14, no. 3, p. 1194, 1976.
- V. L. Granatstein, S. P. Schlesinger, M. Herndon, R. K. Parker and J. A. Pasour, “Production of megawatt submillimeter pulses by stimulated magneto-Raman scattering,” *Applied Physics Letters*, vol. 30, no. 8, p. 384, 1977.

- V. Oerle and B. Mathias, "A High Brightness Electron Beam for Free Electron Lasers", Ph.D. Thesis, University of Twente in Enschede, 1997.
- V.K. Tripathi and R.N. Agarwal, "Ion Acoustic Wave Pumped Free Electron Laser," *IEEE Transactions on plasma science*, 1995, vol. 23, no. 4.
- W. Liu, Z. Yang and Z. Liang, "The investigation of thermal plasma-loaded free-electron laser: linear analysis," *International Journal of Infrared and Millimeter Waves*, vol. 25, no. 7, 2004.
- W. M. Manheimer and E. Ott, "Parametric instabilities induced by the coupling of high and low frequency plasma modes," *Physics of Fluids*, vol. 17, p. 1413, 1974.
- W. P. E. Maria, "Generation of high field, single-cycle terahertz pulses using relativistic electron bunches," Ph. D. Thesis, Eindhoven University of Technology, Roy Frencken, Druk, 2009.
- W. Shi, "SASE X-Ray Free Electron Laser in DESY-The 4th Generation Light Source," *Journal of the GCPD*, vol. 6, 2000.
- X. Yong, L. Yong, L. Hongfu, Y. Sheng, X. Caidong, and W. Jianxun, "RF windows of low reflectivity and absorption for high average power gyrokystrons," Conf. Digest of Joint 32<sup>nd</sup> Int. Conf. on Infrared and Millimeter Waves and the 15<sup>th</sup> Int. Conf. on Terahertz Electronics, Cardiff, 2007, pp. 698-699.
- Y. Socol, "High Power Free Electron Lasers-Technology and Future Applications," *Optics & Laser Technology*, vol. 46, pp. 111-126, 2013.
- Z. Huang and K. J. Kim, "Review of x-ray free-electron laser theory," *Physical review special topics - accelerators and beams*, vol. 10, ID. 034801, 2007.
- Z. Yang, H. Chen and Z. Liang, "Frequency spectrum of plasma filled free electron laser pumped by electromagnetic wave," *International Journal of Infrared and Millimeter Waves*, vol. 23, no. 7, 2002.