Toshiki Tajima

List of Publications (10/10/2023)

The search for citation numbers of the publications has been done using Google Scholar and Web of Science. Because of the search engines do slightly differently as well as the choice of key words chosen are slightly different, we find that though they show some general agreement with each other, there sometimes miss particular article citations all together. Thus, we should be aware that some of the publications are still unaccounted for by both of the search engines.

Google Scholar Citations are shown starting with **Gxxx** at the end of the publications that were counted based on search with the key words of 'plasma physics', 'accelerators', and 'lasers'. **The total number of citations: 32053; h-index: 80; i10-index 346 as of 3/4/2023 Google Scholar. Only the top 10 cited papers have been updated with Google as of 2/7/2023.** For those papers that missed with these key words, shown are by a different Google Scholar search on 5/16/11 with #yyy. (The numbers of citations are stopped written in below 20 or so).

Web of Science Citations are shown starting with **Wxxx** at the end of the publications were counted based on numbers from "Web of Science ResearcherID: https://publons.com/researcher/G-1174-2018/". **Aggregate statistics - citations: 18527; h-index: 61; as of 2/7/2023 through Web of Science. Only the top 10 cited papers have been updated with Web of Science as of 2/7/2023.** In addition (3/19/2018) we specifically searched citation numbers of Paper #41 and #106, which were not caught by the above keywords, as W#yyy.

Executive summary == 6 Representative Papers:

A. Tajima, T. and Dawson, J.M., *Laser Electron Accelerator*, Phys. Rev. Lett. **43**, 267 (1979). G6194, W3766

The invention of the laser wakefield acceleration was suggested. The first plasma collective accelerator.

B. Nakajima, K., Fisher, D., Kawakubo, T., Nakanishi, H., Ogata, A., Kato, Y., Kitagawa, Y., Kodama, R., Mima, K., Shiraga, H., Suzuki, K., Yamakawa, K., Zhang, T., Sakawa, Y., Shoji, T., Nishida, Y., Yugami, N., Downer, M. and Tajima, T., *Observation of Ultrahigh Gradient Electron Acceleration by a Self-Modulated Intense Short Laser Pulse*, Phys. Rev. Lett. **74,** 4428 (1995). G614, W366

The first experimental realization of laser wakefield acceleration was carried out (its early report was in Phys. Scripta, 1994).

C. Tajima, T., Mima, K., Baldis, H., eds., High Field Science (Kluwer Academic/Plenum, New York , 2000). Also the paper in it: Takahashi, Y., Hillman, L.W., Tajima, T., *Relativistic Lasers*

and High Energy Astrophysics: Gamma Ray Bursts and Highest Energy Acceleration, in High Field Science, Eds., T. Tajima, K., Mima, and H. Baldis (Kluwer, NY, 2000).pp171-221.

The first book on High Field Science, the field opened up by such entries as laser wakefield and CPA lasers. In it the paper by Takahashi et al. predicted the gamma burst by the neutronstar-neutronstar collision, which was observed in 2016 (led to Dr. Barrish's simultaneous discovery with gravitational waves (Nobel prize in 2017)).

D. Esirkepov, T., Borghesi. M., Bulanov. S. V., Mourou, G., and Tajima, T., *Highly Efficient Relativistic-Ion Generation in the Laser Piston Regime*, Phys. Rev. Lett.**92**, 175003 (2004). G1308, W853

The efficient new ion acceleration method driven by laser was proposed.

E. Mourou, G.A., Tajima, T., and Bulanov, S., *Optics in the Relativistic Regime*, Rev. Mod Phys.**78,** 309-371 (2006). G2256, W1464

The consolidation of the high field science was reviewed. This paper drove high field science and world-wide developments of its derived applications.

F. R. M. Magee, K. Ogawa, T. Tajima, I. Allfrey, H. Gota, P. McCarroll, S. Ohdachi, M. Isobe, S. Kamio, V. Klumper, H. Nuga, M. Shoji, S. Ziaei, M. W. Binderbauer, and M. Osakabe, *First measurements of pB^{11} fusion in a magnetically confined plasma*, Nature Comm. **14**, 955 (2023). doi.org/10.1038/s41467-023-36655

This is the first experimental realization of the pB^{11} fusion in a magnetized plasma.

BOOKS (and dedicated journal volume)

1. Matsen, F. and Tajima, T., eds., Supercomputers: Algorithms, Architectures, and the Future of Scientific Computation, (University of Texas Press, Austin, 1986).

2. Tajima, T., Computational Plasma Physics—with Applications to Fusion and Astrophysics, Addison-Wesley (Benjamin Frontier Series, Reading, MA, 1989). Reprinted (Perseus, Boulder, 2004). G422

3. Ichikawa, Y.H. and Tajima, T., eds., Nonlinear Dynamics and Particle Acceleration, (American Institute of Physics, New York, 1991).

4. Tajima, T. and Okamoto, M., eds., Physics of High Energy Particles in Toroidal Systems (American Institute of Physics, New York, 1994).

5. Tajima, T. ed., The Future of Accelerator Physics: The Tamura Symposium Proceedings, (American Institute of Physics, New York, 1996).

6. Tajima, T. and Shibata, K., Plasma Astrophysics, (Addison-Wesley, Reading,MA, 1997). Reprinted (Perseus, Boulder, CO, 2002). G311

7. Tajima, T., Mima, K., Baldis, H., eds., High Field Science (Kluwer Academic/Plenum, New York , 2000).

8. Lontano, M., Mourou, G., Svelto, O., Tajima, T., eds. Superstrong Fields in Plasmas (American Institute of Physics, New York, 2002).

9. Mourou, G. and Tajima, T., eds. Zetta-Exawatt Science and Technology (Eur. Phys. J. Special Topic Volume **223**, no.6, Springer Verlag, Berlin, 2014).

10. Tajima, T. and Binderbauer, M., eds. Physics of Plasma-Driven Accelerator and Accelerator-Driven Fusion: Proceedings of Norman Rostoker Memorial Symposium, (AIP, NY, 2016). http://scitation.aip.org/content/aip/proceeding/aipcp/1721

11. T. Tajima, K. Nakajima, and G. Mourou, Laser Wakefield Acceleration: Scientific Frontier Opened up by Ultraintense Lasers (レーザー航跡場加速：超高強度レーザーが拓く科学のフロンティア）(Optronics, Tokyo, 2019).

12. Chattopadhyay, S., Mourou, G., Shiltsev, V., and Tajima, T., Editors, Beam acceleration in Crystals and Nanostructures (World scientific, Singapore, 2020).

13. A. Sergeev and T. Tajima, eds. Special Volume of Uspekhi vol. **192** (Uspekhi Phys vol. **65** in English), Uspekhi Forum on Climate Change and Global Energy Issues (Russian Academy of Sciences, Moscow, 2022).

14. T. Tajima and P. Chen, eds. Progress of Laser Accelerator and Future Prospects (MDPI, Basel, 2023).
https://urldefense.com/v3/__https://www.mdpi.com/books/book/7438__;!!CzAuKJ42GuquVTTmVmPViYEvSg!OgkgNbenOAOwUwOHUP2OaPjdcyMBNeCl78T84aWMDdllUAFZJKZcA9vD5k__Un6WypxLz-AWfOyMxrpQ$

ARTICLES

1. Tajima, T., Ichimaru, S., and Nakano, T., *Energy Transfer Equation and Universal Spectrum of Ion-Acoustic Wave Turbulence*, J. Plasma Phys. **12**, 381 (1974).

2. Dakin, D., Tajima, T., Benford, G., and Rynn, N., *Ion Heating by the Electrostatic Ion Cyclotron Instability: Theory and Experiment*, J. Plasma Phys. **15**, 175 (1976). G76

3. Tajima, T., *Helicity Conservation in a Parametric Scattering Instability in a Magnetic Field*, Phys. Fluids **20**, 61 (1977). W10

4. Tajima, T., Mima, K., and Dawson, J.M, *Alfvén Ion-Cyclotron Instability: Its Physical Mechanism and Observation in Computer Simulation*, Phys. Rev. Lett. **39,** 201 (1977). G31,W24

5. Tajima, T., Leboeuf, J.N., and Dawson, J.M., *Double-Layer Forward Shocks in a Magnetohydrodynamic Fluid*, Phys. Rev. Lett. **40**, 652 (1978).

6. Tajima, T., *Plasma Heating by a Relativistic Electron Beam with Secondary Instabilities*, J. Plasma Phys. **19**, 63 (1978).

7. Molvig, K., Roberson, C.W., and Tajima, T., *Surface Filamentation of a Relativistic Electron Beam in a Plasma*, Phys. Fluids **21**, 975 (1978).

8. Tajima, T. and Mako, F., *Self-consistent Potential for a Relativistic Magnetized Electron Beam through a Metallic Boundary*, Phys. Fluids **21**, 1459 (1978).

9. Leboeuf, J.N., Tajima, T., Kennel, C.F., and Dawson, J.M., *Global Simulation of the Time-dependent Magnetosphere*, Geophys. Res. Lett. **5**, 609 (1978). G122

10. Tajima, T. and Ushioda, S., *Surface Polaritons in LO-Phonon-plasmon Coupled Systems in Semiconductors*, Phys. Rev. B **18**, 1892 (1978).

11. Mima, K., Tajima, T., and Leboeuf, J.N., *Magnetic Field Generation by the Rayleigh-Taylor Instability*, Phys. Rev. Lett. **41**, 1715 (1978). G67, W56

12. Leboeuf, J.N., Tajima, T., and Dawson, J.M., *A Magnetohydrodynamic Particle Code for Fluid Simulation of Plasmas*, J. Comput. Phys. **31**, 379 (1979). G70,W41

13. Tajima, T., *Stability Theory of a Relativistic Electron Beam-plasma System with Finite Geometries*, Phys. Fluids **22**, 1157 (1979).

14. Tajima, T. and Dawson, J.M., *An Electron Accelerator Using a Laser*, IEEE Trans. Nucl. Sci. **NS-26**, 4188 (1979).

15. Leboeuf, J.N. and Tajima, T., *Enhanced Interaction Between Electrons and Large Amplitude Plasma Waves by a DC Electric Field*, Phys. Fluids **22**, 1485 (1979).

16. Leboeuf, J.N. and Tajima, T., *Radiation from Beam-Plasma Interaction in the Presence of a DC Field*, Appl. Phys. Lett. **34**, 548 (1979).

17. Tajima, T. and Dawson, J.M., *Laser Electron Accelerator*, Phys. Rev. Lett. **43**, 267 (1979). G6194, W3766

18. Ohsawa, T., Inutake, M., Tajima, T., Hatori, T., and Kamimura, T., *Plasma Paramagnetism in Radio-Frequency Fields*, Phys. Rev. Lett. **43**, 1246 (1979).

19. Leboeuf, J.N., Tajima, T., and Dawson, J.M., *Enhanced Drag by Radiation for Runaway Electrons*, Phys. Rev. Lett. **43**, 1321 (1979).

20. Leboeuf, J.N., Tajima, T., Kennel, C.F., and Dawson, J.M., *Global Magnetohydrodynamic Simulation of Two-Dimensional Magnetosphere*, Geophysical Monograph Series, Vol. 21, Quantitative Modeling of the Magnetospheric Processes, edited by W.P. Olson (AGU, Washington, D.C., 1979) p. 536.

21. Tajima, T. and Mima, K., *Stabilization of the Alfvén-Ion Cyclotron Instability in Inhomogeneous Media*, Phys. Fluids **23**, 577 (1980).

22. Tajima, T. and Leboeuf, J.N., *The Kelvin-Helmholtz Instability in Supersonic and Super-alfvénic Fluids*, Phys. Fluids **23**, 884 (1980). G31

23. Tajima, T., Leboeuf, J.N., and Dawson, J.M., *A Magnetohydrodynamic Particle Code with Force Free Electrons for Fluid Simulations*, J. Comp. Phys. **38**, 237 (1980).

24. Leboeuf, J.N., Tajima, T., Dawson, J.M., and Lin, A.T., *Particle Simulations of Time-varying X-Points*, (1980) Proc. Int. Conf. Plasma. Phys., Vol. 1, p. 65.

25. Brunel, F., Tajima, T., Leboeuf, J.N., Dawson, J.M., *End loss From a High-Beta Plasma Column*, Phys. Rev. Lett. **44**, 1494 (1980).

26. Tajima, T. and Dawson, J.M., *Ion Cyclotron Resonance Heating and the Alfvén-Ion Cyclotron Instability*, Nucl. Fusion **20**, 1129 (1980). W15

27. Wagner, J.S., Tajima, T., Kan, J.R., Leboeuf, J.N., Akasofu, S. -I., and Dawson, J.M., *V-Potential Double Layers and the Formation of Auroral Arcs*, Phys. Rev. Lett. **45**, 803 (1980). G65,W50

28. Tajima, T., Goldman, M.V., Leboeuf, J.N. and Dawson, J.M., *Breakup and Reconstitution of Langmuir Wave packets*, Phys. Fluids **24**, 182 (1981).

29. Ashour-Abdalla, M., Leboeuf, J.N., Tajima, T., Dawson, J.M. and Kennel, C.F., *Ultra-relativistic Electromagnetic Pulses in Plasmas*, Phys. Rev. A, **23**, 1906 (1981). G61,W51

30. Tajima, T. and Dawson, J.M., *Laser Beat Accelerator*, IEEE Trans. Nucl. Sci. **NS-28**, 3416 (1981).

31. Leboeuf, J.N., Tajima, T., Kennel, C.F., and Dawson, J.M., *Global Simulation of the Three-Dimensional Magnetosphere*, Geophys. Res. Lett. **8**, 257 (1981). #53

32. Wagner, J.S., Gray, P.C., Kan, J.R., Tajima, T., and Akasofu, S.I., *Particle Dynamics in Reconnection Field Configurations*, Planet. Space Sci. **29**, 391 (1981). G40,W29

33. Tajima, T. and Lee, Y.C., *Absorbing Boundary Condition and Budden Turning Point Technique for Electromagnetic Plasma Simulations*, J. Comput. Phys. **42**, 406 (1981). G33,W20

34. Brunel, F., Leboeuf, J.N., Tajima, T., Dawson, J.M., Makino, M., and Kamimura, T., *Magnetohydrodynamic Particle Code: Lax-Wendroff Algorithm with Finer Grid Interpolations*, J. Comput. Phys. **43**, 268 (1981). G44,W25

35. Leboeuf, J.N., Tajima, T., Dawson, J.M., *Magnetic X-Points, Islands Coalescence, and Intense Plasma Heating*, Geophysical Monograph Series, Vol. 25, Physics of Auroral Arcs, edited by S.I. Akasofu and J.R. Kan, (AGU, Washington, D.C. 1981) p. 337.

36. Wagner, J.S., Kan, J.R., Akasofu, S.I., Tajima, T., Leboeuf, J.N., and Dawson, J.M., *A Simulation Study of V-Potential Double Layer and Auroral Arc Physics*, Geophysical Monograph Series, Vol. 25, Physics of Auroral Arcs, edited by S.I. Akasofu and J.R. Kan (AGU, Washington, D.C., 1981) p. 304.

37. Joshi, C., Tajima, T., Dawson, J.M., Baldis, H.A., and Ebrahim, N.A., *Forward Raman Instability and Electron Acceleration*, Phys. Rev. Lett. **47**, 1285 (1981). G288, W161

38. Wang, L.T., Dawson, J.M., Lin, A.T., Menyuk, C., and Tajima, T., *Computer Simulation of Synchrotron Radiation in Two Dimensions*, J. Plasma Phys. **28**, 133 (1982).

39. Leboeuf, J.N., Tajima, T., and Dawson, J.M., *Dynamic Magnetic X Points*, Phys. Fluids **25**, 784 (1982). G103, W71

40. Leboeuf, J.N., Ashour-Abdalla, M., Tajima, T., Kennel, C.F., Coroniti, F.V., and Dawson, J.M., *Ultrarelativistic Waves in Overdense Electron-Positron Plasmas*, Phys. Rev. A **25**, 1023 (1982). G48,W42

41. Tajima, T., Brunel, F., and Sakai, J-I., *Loop Coalescence in Flares and Coronal X-ray Brightening*, Ap. J. **258**, L45 (1982). G150,W#75

42. Tajima, T., *Ion Cyclotron Resonance Heating*, Fusion Energy - 1981 (International Centre for Theoretical Physics, Trieste, 1982) p. 85

43. Tajima, T., *Tearing and Reconnection*, Fusion Energy - 1981 (International Centre for Theoretical Physics, Trieste, 1982) p. 403.

44. Tajima, T. and Dawson, J.M., *Laser Accelerator by Plasma Waves*, in AIP Proc. on Laser Acceleration of Particles, ed. by P.J. Channel. (AIP, Washington, D.C., 1982) No. 91, p. 69.

45. Felber, F.S., Hunter, R.O. Jr., Pereira, N.R., and Tajima, T., *Magnetoresistive Waves in Plasmas*, Appl. Phys. Lett. **41**, 705 (1982).

46. Brunel, F., Tajima, T., and Dawson, J.M., *Fast Magnetic Reconnection Processes*, Phys. Rev. Lett. **49**, 323 (1982). G47,W36

47. Sydora, R.D., Wagner, J.S., Lee, L.C., Wescott, E.M., and Tajima, T., *Electrostatic Kelvin-Helmholtz Instability in a Radially Injected Plasma Cloud*, Phys. Fluids **26**, 2986 (1983). G29,W16

48. Brunel, F. and Tajima, T., *Confinement of a High-beta Plasma Column*, Phys. Fluids **26**, 535 (1983).

49. Molvig, K., Freidberg, J.P., Potok, R., Hirshman, S.P., Whitson, J.C., and Tajima, T., *Turbulent Response in a Stochastic Regime*, in Long-time Prediction in Stochastic Systems, ed. by W. Horton, L. Reichl and V. Szebehely (J. Wiley and Sons, New York, 1983), p. 319.

50. Diamond, P.H., Similon, P.L., Terry, P.W., Horton, C.W., Mahajan, S.M., Meiss, J.D., Rosenbluth, M.N., Swartz, K., Tajima, T., Hazeltine, R.D., and Ross, D.W., *Theoretical Studies of the Anomalous Transport and Fluctuation Spectra Associated with Low Frequency Turbulence in Tokamaks*, in Plasma Physics and Controlled Thermonuclear Research (IAEA Trieste, Italy, 1983) IAEA-CN-41/D-1-2, Vol. 1, p. 259.

51. Wagner, J.S., Tajima, T., Hallinan, T., Lee, L.C., and Akasofu, S-I., *Small-Scale Auroral Arc Deformations*, J. Geophys. Res. **88**, 8013 (1983). G36,W35

52. Barnes, D.C., Kamimura, T., Leboeuf, J.N., and Tajima, T., *Implicit Particle Simulation of Magnetized Plasmas*, J. Comput. Phys. **52**, 480 (1983). G81,W45

53. Tajima, T., *Laser Accelerator by Plasma Waves for Ultra-High Energies*, Proc. of the ECFA-RAL Meeting for Challenge of Ultra-High Energies, ed. by J. Mulvey (Rutherford Appleton Lab, Chilton, England, 1983) p. 169.

54. Gray, P.C., Wagner, J.S., Tajima, T., and Million, R., *Large-Scale Particle Simulations in a Virtual Memory Computer*, Comput. Phys. Comm. **30,** 109 (1983).

55. Wagner, J.S., Lee, L.C., Wu, C.S., and Tajima, T., *Computer Simulation of Auroral Kilometric Radiation*, Geophys. Res. Lett. **10**, 483 (1983). G38

56. Tajima, T., *Laser Beat-wave Accelerator for Ultra-High Energies*, IEEE Trans. Nucl. Sci. **NS-30**, 3209 (1983).

57. Vomvoridis, J.L., Tajima, T., Felber, F.S., Spivey, B., and Hunter, R.O., *An RF Electron Beam Buncher*, IEEE Trans. Nucl. Sci. **NS-30**, 3466 (1983).

58. Bhattacharjee, A., Brunel, F., and Tajima, T., *Magnetic Reconnection Driven by the Coalescence Instability*, Phys. Fluids **26**, 3332 (1983). G102, W61

59. Tajima, T., *Laser Accelerator for Ultra-High Energies* in Proc. of 12th International Conference on High-Energy Accelerators, ed. by F.T. Cole and R. Donaldson (Fermi National Accelerator Laboratory, Batavia, Illinois, 1983) p. 470.

60. Wagner, J.S., Lee, L.C., Wu, C.S., and Tajima, T., *A Simulation Study of the Loss-Cone Driven Cyclotron Maser Applied to Auroral Kilometric Radiation*, Radio Science **19**, 509 (1984). G38

61. Leboeuf, J.N., Brunel, F., Tajima, T., Sakai, J-I., Wu, C.C., and Dawson, J.M., *Computer Modeling of Fast Collisionless Reconnection*, American Geophysical Union Monograph Series, vol. 30, Magnetic Reconnection in Space and Laboratory Plasmas, p. 282 (1984).

62. Horton, C.W., Tajima, T., and Galvão, R., *Quasilinear Evolution of Tearing Modes During Magnetic Reconnection*, American Geophysical Union Monograph, vol. 30, Magnetic Reconnection in Space and Laboratory Plasmas, p. 45 (1984).

63. Sakai, J., Tajima, T., and Brunel, F., *Forced Reconnection by Nonlinear Magneto-hydrodynamic Waves*, Solar Phys. **91**, 103 (1984). G28,W20

64. Sullivan, D.J. and Tajima, T., *High Energy Particle Acceleration by a Laser Beatwave*, in Laser Interaction and Related Plasma Phenomena, vol. 6, ed. by H. Hora and G.H. Miley (Plenum Publishing, New York, 1984) p. 1093.

65. Mako, F. and Tajima, T., *Collective Ion Acceleration by a Reflexing Electron Beam: Model and Scaling*, Phys. Fluids **27**, 1815 (1984). G44,W31

66. Tajima, T., *Laser Plasma Accelerator for Ultra-high Energies*, AIP Proc. No. 127, The Physics of High Energy Particle Accelerators, ed. by M. Month, P. Dahl, and M. Dienes (Brookhaven National Laboratory, Upton, N.Y., 1984), p. 793.

67. Tajima, T., *Plasma-fiber Laser Accelerator*, Proc. Laser 1983 (1984) p. 104.

68. Nakajima, H., Tajima, T., Brunel, F., and Sakai, J., *Signatures of the Coalescence Instability in Solar Flares* in Proc. Course and Workshop on Plasma Astrophysics (ESA SP 207, Varenna, Italy, 1984) p. 193.

69. Sakai, J., Tajima, T., and Sugihara, R., *Explosive Transverse Electric Field and Particle Acceleration During Magnetic Collapse*, Proc. Course and Workshop on Plasma Astrophysics (Varenna, Italy, August 1984) ESASP-207, Nov 1984, p. 189.

70. Tajima, T., Clark, A., Craddock, G.G., Gilden, D.L., Leung, W.K., Li, Y.M., Robertson, J.A., and Saltzman, B.J., *Particle Simulation of Plasmas and Stellar Systems*, Amer. J. Phys. **53**, 365 (1985).

71. Sydora, R.D., Leboeuf, J.N., Diamond, P.H., An., Z.G., and Tajima, T., *Particle Simulation of the Resistive G-Mode in a Sheared Magnetic Field*, Phys. Fluids **28**, 255 (1985).

72. Sydora, R.D., Leboeuf, J.N., and Tajima, T., *Particle Simulation of Drift Waves in a Sheared Magnetic Field*, Phys. Fluids **28**, 528 (1985).

73. Tajima, T., Brunel, F., Sakai, J-I., Vlahos, L., and Kundu, M., *The Coalescence Instability in Solar Flares*, in Proc. IAU Symposium107, Unstable Current Systems and Plasma Instabilities, (1985) p. 197.

74. Gilden, D. and Tajima, T., *Magnetic Field Reconnection in Differentially Rotating Accretion Disks*, in Proc. IAU Symposium107, Unstable Current Systems and Plasma Instabilities, p. 477.

75. Wagner, J.S., Lin, C.S., and Tajima, T., *Simulation Study of Type 2 Counterstreaming Electrons Along Auroral Field Lines: Computer Simulation Study*, J. Geophys. Res. **90**, 4249 (1985).

76. Horton, C.W. and Tajima, T., *Laser Beat-wave Accelerator and Plasma Noise*, Phys. Rev. A **31**, 3937 (1985). G24,W18

77. Tajima, T., *High Energy Laser Plasma Accelerators*, Laser and Particle Beams **3**, 351 (1985). G131, W84

78. Horton, W. and Tajima, T., *Effect of Noise and Pump Depletion and Plasma Noise on the Plasma Beat Wave Accelerator*, in AIP Proc. 130, Laser Acceleration, ed. by C. Joshi and T. Katsouleas (AIP, New York) p. 179 (1985).

79. Tajima, T. and Sudan, R.N., *Study of Beat-wave Growth and Saturation*, ibid. p. 172 (1985).

80. Wagner, J.S., Tajima, T. and Akasofu, S. -I., *Current Interruption by Density Depression*, Solar Phys. **98**, 305 (1985).

81. Tajima, T., Horton, W., Witte, K., and Singer, S., *Pump Depletion and Laser Staging for Beat-wave Accelerator*, IEEE Trans. Nucl. Sci. **NS-32**, 3542 (1985).

82. Zaidman, E., Tajima, T., Neuffer, D., Mima, K., Ohsuga, T., and Barnes, D.C., *Study of the Plasma Fiber Accelerator*, IEEE Trans. Nucl. Sci. **NS-32**, 3545 (1985).

83. Horton, W. and Tajima, T., *Laser Beat-wave Accelerator in a Turbulent Plasma*, Proc. of the Inter. Conf. on Lasers '84, eds. K.M. Corcoran, D.M. Sullivan, W.C. Stwalley (STS Press, McLean, VA, 1985) p. 454.

84. An, Z., Diamond, P., Hazeltine, R., Leboeuf, J., Rosenbluth, M., Sydora, R., Tajima, T., Carrera, Garcia, L., Hender, T., Hicks, H.R., Holmes, J., Lynch, V., and Strauss, H., *Role of Multiple Helicity Nonlinear Interaction of Tearing Modes in Dynamo and Anomalous Thermal Transport in Reversed-Field Pinch*, in Plasma Physics and Controlled Thermo-Nuclear Fusion Research (IAEA Vienna, Austria, 1985) Vol. 2, p. 231.

85. Wagner, J.S., Gray, P.C., Tajima, T., and Akasofu, S-I., *A Plasma Simulation Study of the Transformation From a Closed to an Open Magnetic Configuration*, J. Geophys. Res. **91**, 1491 (1986).

86. Riyopoulos, S., Tajima, T., Hatori, T., and Pfirsch, D., *Diffusion Induced by Cyclotron Resonance Heating*, Nucl. Fusion **26**, 627 (1986). W34

87. Mima, K., Ohsuga, T., Takabe, H., Nishihara, K., Tajima, T., Zaidman, E., and Horton, W., *Wakeless Triple-Soliton Accelerator*, Phys. Rev. Lett. **57**, 1421 (1986). G71,W48

88. Tajima, T. and Sakai, J.-I., *Explosive Coalescence of Magnetic Islands*, IEEE Trans. Plasma Sci. **PS-14**, 929 (1986).

89. Horton, W. and Tajima, T., *Pump Depletion in the Plasma Beat-Wave Accelerator*, Phys. Rev. A **34**, 4110 (1986). G59,W41

90. Riyopoulos, S. and Tajima, T., *Simulation Study of Two-Ion Hybrid Resonance Heating*, Phys. Fluids **29**, 4161 (1986). G38

91. Eliezer, S., Tajima, T., and Rosenbluth, M.N., *High Intensity Particle Beams for a Muon-Catalyzed Fusion-Fission Reactor*, Laser Interactions and Related Plasma Phenomena, Vol. 7, ed. by H. Hora and G. Miley (Plenum, NY, 1986) p. 613.

92. Sydora, R.D., Leboeuf, J.N., Thayer, D., Diamond, P.H., and Tajima, T., *Three Dimensional Particle Simulation of Drift-Wave Fluctuations in a Sheared Magnetic Field*, Phys. Rev. Lett. **57**, 3269 (1986).

93. Sakai, J.I. and Tajima, T., *Explosive Coalescence of Current Loops and Particle Acceleration*, Proc. Joint Varenna-Abastumani Int. School and Workshop on Plasma Astrophysics (European Space Agency, Sukhumi, August 1986) ESASP-251, p. 77.

94. Sakai, J.I., Tajima, T., and Sugihara, R., *Preflare Acceleration by Magnetic Trapping in Shearing Arcades*, Proc. Joint Varenna-Abastumani Int. School and Workshop on Plasma Astrophysics (European Space Agency, Sukhumi, August 1986) ESASP-251, p. 113.

95. Geary, J.L. Tajima, T., Leboeuf, J.N., Zaidman, E.G., and Han, J.H., *Two and Three-dimensional Magnetoinductive Particle Codes with Guiding Center Electron Motion*, Comp. Phys. Comm. **42**, 313 (1986).

96. Sydora, R.D., Leboeuf, J.N., and Tajima, T., *Two and Three Dimensional Particle Simulation Models for Study of Plasma Microinstabilities*, in Supercomputers, eds. F.A. Matzen and T. Tajima, (University of Texas Press, Austin, 1986) p. 365.

97. Barnes, D.C., Kurki-Suonio, T., and Tajima, T., *Laser Self-Trapping for the Plasma Fiber Accelerator*, IEEE Trans. Plasma Science **PS-15**, 154 (1987). G73, W69

98. Momota, H., Okamoto, M., Nomura, Y., Ohnishi, M., Yoshikawa, K., Yamamoto, Y., Berk, H.L., Tajima, T., Ishida, A., Ohi, S., and Miley, G.H., *Advanced Fuels in a Field Reversed Configuration*, Fusion Technology **11**, 436 (1987).

99. Eliezer, S., Tajima, T., and Rosenbluth, M.N., *A Muon Catalyzed Fusion-Fission Reactor*, Plasma Physics and Controlled Thermonuclear Fusion Research (IAEA, Vienna, 1987) vol. 3, p. 301.

100. Momota, H., Okamoto, M., Nomura, Y, Yoshikawa, K., Ohnishi, M., Ishida, A., Sato, K., Ohi, S., Berk, H.L., and Tajima, T., *Physics Considerations on a Fusion Plasma in a Field-Reversed Configuration*, Plasma Physics and Controlled Thermonuclear Fusion Research (IAEA, Vienna, 1987) IAEA-CN-47/D-5-14, Vol. 2, p. 719.

101. Eliezer, S., Tajima, T., and Rosenbluth, M.N., *Muon Catalyzed Fusion-Fission Reactor Driven by a Recirculating Beam*, Nucl. Fusion **27**, 527 (1987). G24,W15

102. Tajima, T. and Eliezer, S., *Muonic X-Ray Laser Assisted by Catalyzed Fusion of Deuterium and Tritium*, Laser and Particle Beams **5**, 393 (1987).

103. Tajima, T., *Muonic Superdense Matter and Channeled Beams*, Muon Cat. Fusion **1**, 257 (1987).

104. Tajima, T. and Gilden, D., *Reconnection-driven Oscillations on Dwarf Nova Disks*, Ap. J. **320**, 741 (1987).

105. Tajima, T., Sakai, J., Nakajima, H., Kosugi, T., Brunel, F., and Kundu, M.R., *Current Loop Coalescence Model of Solar Flares*, Astrophys. J. **321**, 1031 (1987). G213,W168

106. Tajima, T., *A Triple Soliton Accelerator*, NATURE **327**, 285 (1987).

107. Steinolfson, R.S. and Tajima, T., *Energy Buildup in Coronal Magnetic Flux Tubes*, Ap. J. **322**, 503 (1987). G24

108. Berk, H.L. Momota, H., and Tajima, T., *Plasma Current Sustained by Fusion Charged Particles in a Field Reversed Configuration*, Phys. Fluids **30**, 3548 (1987). G46,W27

109. Horton, W., Tajima, T., and T. Kamimura, *Kelvin-Helmholtz Instability and Vortices in Magnetized Plasma*, Phys. Fluids **30**, 3485 (1987). G90, W64

110. Horton, W., Tajima, T., and Mima, K., *Laser Acceleration of Particles with the Plasma Vector Plasma Soliton*, Zeitschrift für Naturforschung **42A**, 1199 (1987).

111. Mima, K., Takabe, H., and Tajima, T., *Laser Accelerators (Recent Topics on Beat Wave Acceleration)*, Rev. Laser Eng. **15**, 481 (1987).

112. Tajima, T. and Cavenago, M., *Crystal X-ray Accelerator*, Phys. Rev. Lett. **59**, 1440 (1987). G51,W25

113. Sakai, J., Nakajima, H., Zaidman, E., Tajima, T., Kosugi. T., and Brunel, F., *Signatures of Current Loop Coalescence in Solar Flares*, in "Rapid Fluctuations in Solar Flares", eds. B.R Dennis, L.E. Orwig, and A.L. Kiplinger, (NASA Conference Publication 2449, Washington, DC, 1987), p. 393.

114. Tajima, T. and Cavenago, M., *Crystal as a Linac Structure for X-rays*, in New Development in Particle Acceleration Techniques ed. by S. Turner (CERN, Geneve, 1987), 649.

115. Horton, W. and Tajima, T., *Linear Theory of Driven Reconnection*, J. Geophys. Res. **93A4**, 2741 (1988).

116. Momota, H., Okamoto, M., Nomura, Y., Ohnishi, M., Berk, H., and Tajima, T., *$D^{-3}H_e$ Fuels in a Field-Reversed Configuration*, Nucl. Instr. Meth. **A271**, 7 (1988).

117. Horton, W., Hong, B.G., Tajima, T. and Bekki, N., *Short Wavelength Temperature Gradient Driven Drift Wave Turbulence in Tokamaks*, in Theory of Fusion Plasmas, edited by Vaclavik, J., Troyon, F. and Sindoni, E., (Editrice Compositori, Bologna 1988), p. 483.

118. Horton, W., Bekki, N., Berk, H.L., Hong, B.G., LeBrun, M.J., Mahajan, S., Tajima, T., and Zhang, Y.Z., *Electromagnetic Drift Mode Transport Formulas and Empirical Scaling for Tokamaks*, Plasma Physics and Controlled Thermonuclear Fusion Research, (IAEA, Vienna, 1989) **2**, 211.

119. Eubank, S., Miner, W., Tajima, T., and Wiley, J., *Interactive Computer Simulation and Analysis of Newtonian Dynamics*, Am. J. Phys. **57**, 457 (1989).

120. Zaidman, E.G. and Tajima, T., *Nonlinear Twist-kink Instability of a Coronal Loop*, Astrophys. J. **338**, 1139 (1989).

121. Shibata, K., Tajima, T., Matsumoto, R., Horiuchi, T., Hanawa, T., Rosner, R., and Uchida, Y., *Nonlinear Parker Instability of Isolated Magnetic Flux in a Plasma*, Astrophys. J. **338**, 471 (1989). G98, W85

122. Tajima, T., Eliezer, S., and Kulsrud, R.M., *A New Concept for Muon Catalyzed Fusion Reactor,* "Muon-Catalyzed Fusion," ed. by S.E. Jones, J. Rafelski, and H. Monkhurst, AIP Proc. **181** (AIP, New York, 1989) p. 423.

123. Shibata, K., Tajima, T., Steinolfson, R.S., and Matsumoto, R., *Nonlinear Evolution of Parker Instability of Isolated Magnetic Flux Sheet and Its Application to Emerging Magnetic Flux in the Solar Atmosphere,* Proc. IAU Colloq. **104** *Solar and Stellar Flares,* eds. B.M. Haisch and M. Rodono (Catania Astrophys. Obs., Catania, Italy, 1989) p. 281.

124. Tajima, T., Horton, W., Nishikawa, S., and Nishikawa, T., *Ionospheric Accelerator*, Laser Part. Beams **7**, 637 (1989).

125. Osuga, T., Mima, K., Takabe, H., and Tajima, T., *Relativistic Phase Fluctuations of Beat Wave Accelerators and Wakeless Triple Solitons,* Phys. Fluids **B1**, 1866 (1989).

126. Shibata, K., Tajima, T., Steinolfson, R.S., and Matsumoto, R., *Two-Dimensional Magnetohydrodynamic Model of Emerging Magnetic Flux in the Solar Atmosphere*, Astrophys. J. **345**, 584 (1989). G161

127. Kurki-Suonio, T., Morrison, P.J., and Tajima, T., *Self-Focusing of an Optical Beam in a Plasma*, Phys. Rev. A **40,** 3230 (1989). G118, W90

128. Holcomb, K.A., and Tajima, T., *General-Relativistic Plasma Physics in the Early Universe*, Phys. Rev. D **40**, 3809 (1989). G84, W73

129. Newberger, B.S. and Tajima, T., *High-Energy Beam Transport in Crystal Channels*, Phys. Rev. A **40**, 6897 (1989).

130. Newberger, B., Tajima, T., Huson, F.R., Mackay, W., Covington, B.C., Payne, J.R., Zou, Z.G., Mahale, N.K., and Ohnuma, S., *Application of Novel Material in Crystal Accelerator Concepts*, Proc. IEEE Part. Acc. (IEEE, Chicago, 1989) p. 630.

131. Newberger, B. and Tajima T., *Fokker-Planck Transport in Solid State Accelerator Concepts*, AIP Proc. No. **193**, Advanced Accelerator Concepts, (Lake Arrowhead) ed. by C. Joshi, (UCLA, Los Angeles, Ca., 1989) p. 290.

132. Kurki-Suonio, T., Morrison, P.J., and Tajima, T., *Localized Profiles of Optical Beams in Plasma*, AIP Proc. No. **193,** Advanced Accelerator Concepts, (Lake Arrowhead) ed. by C. Joshi, (UCLA, Los Angeles, Ca., 1989) p. 227.

133. Ichimaru, S., Nakano, A., Ogata, S., Iyetomi, H. and Tajima, T., *Nuclear Reaction Rates Between Hydrogen Isotopes in PdDx*, Proc. of 5th Inter. Conf. on Emerging Nuclear Energy Systems, Emerging Nuclear Energy Systems, eds. Ulrich von Mollendorff and Balbir Goel, (World Scientific, Singapore., 1989).

134. Koga, J., Geary, J.L., Fujinami, T., Newberger, B.S., Tajima, T., and Rostoker, N., *Numerical Investigation of a Plasma Beam Entering Transverse Magnetic Fields*, J. Plasma Phys. **42**, 91 (1989).

135. Tajima, T. and Sakai, J-I., *Explosive Coalescence of Magnetic Islands-Simulation Study*, Fizika Plazmy **15**, 899 (1989) [Sov. J. Plasma Phys. **15**, 519 (1989)]. W17

136. Tajima, T. and Sakai, J-I., *Coalescence of Islands-Magnetic Collapse*, Fizika Plazmy **15**, 1045 (1989) [Sov. J. Plasma Phys. **15**, 606 (1989)]. G29

137. Tajima, T., Newberger, B.S., Huson, F.R., MacKay, W.W., Covington, B.C., Payne, J., Mahale, N.K., and Ohnuma, S., *Beam Transport in the Crystal X-Ray Accelerator*, Part. Acc. **32**, 235 (1990).

138. Tajima, T. and Koga, J., *Self-Consistent Collision Code for Beam Tracking in SSC*, Part. Acc. **28**, 603 (1990).

139. Kurki-Suonio, T., Tajima, T., and Morrison, P.J., *Stable Solitary Propagation of Optical Beams*, Part. Acc. **32**, 241 (1990).

140. Doxas, I., Horton, W., Sandusky, K., Tajima, T., and Steinolfson, R., *Numerical Study of the Current Sheet and Plasma Sheet Boundary Layer in a Magnetotail Model*, J. Geophys. Res **95A8**, 12033 (1990). G37,W30

141. Horton, W. and Tajima, T., *Decay of Correlations and the Collisionless Conductivity in the Geomagnetic Tail*, Geophys. Res. Lett. **17**, 123 (1990). #50,W51

142. Shibata, K., Tajima, T., and Matsumoto, R., *Magnetic Accretion Disks Fall into Two Types*, Astrophys. J. **350**, 295 (1990). G79,W57

143. Shibata, K., Nozawa, S., Matsumoto, R., Sterling, A.C. and Tajima, T., *Emergence of Solar Magnetic Flux from the Convection Zone into the Photosphere and Chromosphere*, Astrophys. J. **351**, L25 (1990). G47

144. Horton, W., Hong, B.G., Tajima, T., and Bekki, N., *Short Wavelength Electron Temperature Gradient Driven Drift Wave Turbulence*, Comm. Plasma Phys. Controlled Fusion **13**, 207 (1990). W15

145. Tajima, T., Benz, A.O., Thaker, M., and Leboeuf, J.N., *Enhanced Radiation Driven by a dc Electric Field*, Ap. J. **353**, 666 (1990). G34,W32

146. Geary, J.L., Leboeuf, J.N., and Tajima, T., *Computer Simulation of Alfvén Wave Heating*, Phys. Fluids **B2**, 773 (1990).

147. Ichimaru, S., Nakano, A., Ogata, S., Tanaka, S., Iyetomi, H., and Tajima, T., *Statistical Mechanical Theory of Cold Nuclear Fusion in Metal Hydrides*, J. Phys. Soc. Jpn. **59**, 1333 (1990).

148. Kaisig, M., Tajima, T., Shibata, K., Nozawa, S., and Matsumoto, R., *Nonlinear Excitation of Magnetic Undular Instability by Convective Motion*, Astrophys. J. **358**, 698 (1990). G32,W25

149. Shibata, K., Tajima, T., and Matsumoto, R., *Self-similar Evolution of the Nonlinear Magnetic Buoyancy Instability*, Phys. Fluids B **2**, 1989 (1990). G34,W20

150. Tajima, T. and Taniuti, T., *Nonlinear Interaction of Photons and Phonons in Electron-Positron Plasmas*, Phys. Rev. A **42**, 3587 (1990). G116, W146

151. Horton, W. and Tajima, T., *Decay of Correlations and the Collisionless Conductivity in the Geomagnetic Tail*, Geophys. Res. Lett. **17**, 123 (1990). G66,W51

152. Tajima, T., Iyetomi, H., and Ichimaru, S., *Influence of Attractive Interaction Between Deuterons in Pd on Nuclear Fusion*, J. Fusion Energy **9**, 437 (1990).

153. Ichimaru, S., Ogata, S., Nakano, A., Iyetomi, H., Tajima, T., *Statistical-Mechanical Effects on Cold Nuclear Fusion in Metal Hydrides*, "Strongly Coupled Plasma Physics", ed. S. Ichimaru, (Elsevier Science Publishers B.V., Amsterdam, The Netherlands, 1990) p. 653.

154. Eliezer, S., Tajima, T. and Kulsrud, R.M., *A Muon Catalyzed Fusion Reactor and Direct Conversion of the Catalyzed Energy*, Proc. Muon Catalyzed Fusion '90.

155. Ryutova, M., Kaisig, M., and Tajima, T., *Nonlinear Magnetosonic Waves in an Inhomogeneous Plasma*, in Proc. Abastumani Conference, ed. T.D. Guyenne, (World Scientific, Singapore, 1990) p. 339.

156. Tajima, T. and Shibata, K., *On the Origin of Cosmic Magnetic Fields*, IAU Symposium 140 Galactic and Intergalactic Magnetic Fields, eds. R. Bock, P.P. Kronberg, and R. Wielebinski, (Kluwer, Dordrecht, 1990) p. 531.

157. Newberger, B.S. and Tajima, T., *Beam Transport in Bent Crystal Extractors*, EPAC 1990 Proc.(CERN, Villigen) 1286 (1990).

158. Jatencopereira, V., Steinolfson, R.S., Mahajan, S., Tajima, T., *Nonlinear Propagation of Mag Waves through the Transition Region*, Revista Mexicana de Astronomia Y Astrofisica **21** (SI), 538-540 (1990).

159. Kurki-Suonio, T. and Tajima, T., *Transport Model of Optical Beams in a Plasma,* J. Comp. Phys. **94**, 186 (1991).

160. Hanami, H. and Tajima, T., *MHD Reconnection Model for Optical Jets, H-H Objects and GGD Objects*, IAU Proc. 140, Galactic and Intergalactic Magnetic Fields, eds. R. Bock, P.P. Kronberg, and R. Wielebinski, (Kluwer, Dordrecht, 1991) p. 341.

161. Tajima, T., Horton, W., Morrison, P.J., Schutkeker, J., Kamimura, T., Mima, K., Abe, Y., *Instabilities and Vortex Dynamics in Shear Flow of Magnetized Plasmas*, Phys. Fluids **B3**, 938 (1991). G63,W46

162. Mima, K., Horton, W., Tajima, T., and Hasegawa, A., *Power-Law Energy Spectrum and Orbital Stochasticity*, in Proc. Nonlinear Dynamics and Particle Acceleration, eds. Y.H. Ichikawa and T. Tajima, (American Institute of Physics, New York, 1991) p. 27.

163. Tajima, T. and Koga, J., *Beam-Beam Interaction Simulations of the SSC*, in Proc. Nonlinear Dynamics and Particle Acceleration, eds. Y. Ichikawa and T. Tajima, (American Institute of Physics, New York, 1991) p. 236.

164. Tajima, T., *Summary of the International Dawson Symposium on the Physics of Plasmas,* Fusion Tech. **19**, 409 (1991).

165. Newberger, B.S., Tajima, T., Huson, F.R., and Covington, B.C., *Topics in Crystal Acceleration*, in Proc. of the Eighth Inter. Conf. on High Power Particle Beams, eds. B.N. Breizman and B.A. Knyazev, (World Scientific, Singapore, 1991) p. 906.

166. Shibata, K., Nozawa, S., Matsumoto, R., Tajima, T., and Sterling, A.C., *Atmospheric Heating in Emerging Flux Regions*, to be published in Proc. Heidelberg Conference on Mechanisms of Chromospheric and Coronal Heating, ed. P. Ulmschneider, (Springer-Verlag, Berlin, 1991).

167. Horton, W., Liu, C., Burns, B., Tajima, T., *Collisionless Plasma Transport across Loop Magnetic Fields*, Phys. Fluids **B3**, 2192 (1991).

168. Kaisig, M., Tajima, T., and Ryutova, M., *Absorption of Magnetoacoustic Waves in the Solar Atmosphere with Random Inhomogeneities of Density and Magnetic Fields*, Flare Physics in Solar Activity Maximum 22, eds. Y. Uchida, R.C. Canfield, T. Watanabe, and E. Hiei, (Springer-Verlag, Berlin, 1991) p. 287.

169. Hanami, H. and Tajima, T., *Numerical Study of Compressible Solar Magnetoconvection with an Open Transitional Boundary*, Astrophys. J. **377**, 694 (1991).

170. Holcomb, K.A. and Tajima, T., *A Mechanism for Gamma-Ray Bursts by Alfvén-Wave Acceleration in a Non-uniform Atmosphere*, Astrophys. J. **378**, 682 (1991).

171. Ryutova, M., Kaisig, M., and Tajima, T., *Propagation of Magnetoacoustic Waves in the Solar Atmosphere with Random Inhomogeneities of Density and Magnetic Fields*, Astrophys. J. **380**, 268 (1991).

172. Horton, W. and Tajima, T., *Collisionless Conductivity and Stochastic Heating of the Plasma Sheet in the Geomagnetic Tail*, J. Geophys. Res. **96A9**, 15811 (1991). G73,W40

173. Horton, W., Liu, C., Hernandez, J., and Tajima, T., *Stochastic Mixing of Protons from Chaotic Orbits in the Nightside Geomagnetosphere*, Geophys. Res. Lett. **18**, 1575 (1991).

174. Horton, W. and Tajima, T., *Transport from Chaotic Orbits in the Geomagnetic Tail*, Geophys. Res. Lett. **18**, 1583 (1991).

175. LeBrun, M.J. and Tajima, T., *IFS Numerical Laboratory Tokamak*, Proc. US-Japan Workshop on Advances in Simulation Techniques Applied to Plasmas and Fusion, eds. V.K. Decyk, J.N. Leboeuf, and T. Kamimura, (UCLA, Los Angeles, 1991) p. 1362.

176. Meerson, B. and Tajima, T., *A Mesoscopic Linear Accelerator Driven by Super-Intense Subpicosecond Laser Pulses*, Optics Com. **86**, 283 (1991).

177. Eliezer, S., Tajima, T., and Kulsrud, R.M., *A Muon Catalyzed Fusion Reactor and Direct Conversion of the Catalyzed Energy*, Muon Cat. Fusion **6**, 357 (1991).

178. Kotschenreuther, M., Berk, H.L., Denton, R., Hamaguchi, S., Horton, W., Kim, C.B., LeBrun, M., Lyster, P., Mahajan, S., Miner, W.H., Morrison, P.J., Ross, D.W., Sydora, R.D., Tajima, T., Taylor, J.B., Valanju, P.M., Wong, H.V., Xiao, S.Y., and Zhang, Y.Z., *Novel Computational Techniques to Predict Transport in Confinement Devices, and Applications to Ion Temperature Gradient Driven Turbulence*, in Plasma Physics and Controlled Thermonuclear Fusion Research, (IAEA, Vienna, 1991) vol. 2, p. 361.

179. Tajima, T., Cable, S., and Shibata, K., *On the Origin of Cosmological Magnetic Fields*, in Primordial Nucleosynthesis and Evolution of Early Universe, eds. K. Sato and J. Audouze, (Kluwer, Dordrecht, 1991) p. 423. W66

180. Kamimura, T., Montalvo, E., Barnes, D.C., Leboeuf, J.N., and Tajima, T., *Implicit Particle Simulation of Electromagnetic Plasma Phenomena*, J. Comput. Phys. **100**, 77 (1992).

181. Nozawa, S., Shibata, K., Matsumoto, R., Sterling, A.C., Tajima, T., Uchida, Y., Ferrari, A., and Rosner, R., *Emergence of Magnetic Flux from the Convection Zone into the Solar Atmosphere. I. Linear and Nonlinear Adiabatic Evolution of the Convective-Parker Instability*, Astrophys. J. Suppl. **78**, 267 (1992). G57,W47

182. Kaisig, M., Tajima, T., and Lovelace, R.V.E., *Magnetic Interchange Instability of Accretion Disks*, Astrophys. J. **386**, 83 (1992). G53,W42

183. Tajima, T., Cable, S., Shibata, K., and Kulsrud, R.M., *On the Origin of Cosmological Magnetic Fields*, Astrophys. J. **390**, 309 (1992). G80

184. Tajima, T., Eliezer, S., and Kulsrud, R.M., *Direct Conversion of Muon Catalyzed Fusion Energy*, Muon Cat. Fusion **7**, 47 (1992).

185. Aranson, I., Meerson, B., and Tajima, T., *Excitation of Solitons by an External Resonant Wave with a Slowly Varying Phase Velocity*, Phys. Rev. A **45**, 7500 (1992). G65,W42

186. Tajima, T., Cable, S., and Kulsrud, R.M., *On Zero Frequency Magnetic Fluctuations in Plasmas*, Phys. Fluids **B4**, 2338 (1992). G25,W16

187. Horton, W., Hernandez, J., Kim, J.Y., and Tajima, T., *Orbital Stability, Transport, and Convective Heating in the Current Sheet Plasma*, in Physics of Space Plasmas (1991), SPI Conference Proceedings and Reprint Series, Number 11, eds. T. Chang, G.B. Crew, and J.R. Jasperse, (Scientific Publishers, Cambridge, Ma., 1992) p. 225.

188. Cable, S. and Tajima, T., *Low-Frequency Fluctuations in Plasma Magnetic Fields*, Phys. Rev. A **46**, 3413 (1992). W16

189. Mima, K., Yoshikawa, K., Morimiya, O., Takase, H., Takabe, H., Kitagawa, Y., Tajima, T., Kosaki, Y., and Nakai, S., *Preliminary Studies of Direct Energy Conversion in a $D^{-3}He$ Inertial Confinement Fusion Reactor*, Fusion Tech. **22**, 56 (1992).

190. Haswell, C.A., Tajima, T., and Sakai, J.-I., *High Energy Particle Acceleration by Explosive Electromagnetic Interaction in an Accretion Disk*, Ap. J. **401**, 495 (1992). G62,W41

191. Roy, M. and Tajima, T., *The Effect of Hot Inhomogeneous Plasma on Geomagnetic Micropulsations*, J. Atmos. Terr. Phys. **54**, 209 (1992).

192. Breizman, B., Tajima, T., Fisher, D.L., and Chebotaev, P.Z., *Excitation of Nonlinear Wake Field in a Plasma for Particle Acceleration*, in Research Trends in Nonlinear and Relativistic Effects in Plasmas, ed. V. Stefan, (AIP, New York, 1992) p. 263.

193. Kinney, R.M., Tajima, T., and Irie, H., *Magnetic Surfaces in a Steady-State Tokamak*, Phys. Fluids B **5**, 118 (1993).

194. LeBrun, M.J., Tajima, T., Gray, M.G., Furnish, G., and Horton, W., *Toroidal Effects on Drift Wave Turbulence*, Phys. Fluids B **5**, 752 (1993). G60,W37

195. Beklemishev, A.D., Gordin, V.A., Khayrutdinov, R.R., Petviashvili, V.I., and Tajima, T., *Toroidal Plasma Reactor with a Low External Magnetic Field*, Nucl. Fusion **33**, 237 (1993).

196. Riffe, D.M., Wang, X.Y., Downer, M.C., Fisher, D.L., Tajima, T., Erskine, J.L., and More, R.M., *Femtosecond Thermoionic Emission from Metals in the Space-Charge-Limited Regime*, J. Opt. Soc. Amer. B**10**, 1424 (1993). G114, W82

197. Matsumoto, R., Tajima, T., Shibata, K., and Kaisig, M., *Three-Dimensional Magnetohydrodynamics of the Emerging Magnetic Flux in the Solar Atmosphere*, Astrophys. J. **414**, 357 (1993). G106, W85

198. Horton, W., Cheung, L., Kim, J.-Y., and Tajima, T., *Self-Consistent Plasma Pressure Tensors from the Tsyganenko Magnetic Field Models*, J. Geophys. Res. **98A10**, 17327 (1993).

199. Downer, M.C., Riffe, D.M., Wang, X.Y., Erskine, J.L., Fisher, D.L., Tajima, T., and More, R.M., *Femtosecond Thermoionic Emission: Experiment, Analytic Theory, and Particle Simulations*, Ultrafast Phenomena 8, eds. J.L. Martin, A. Migus, G.A. Mourou, A.H. Zewail (Springer-Verlag, Berlin, 1993) p. 335.

200. Kinney, R., Tajima, T., Petviashvili, N., and McWilliams, J.C., *Discrete Vortex Representation of Magnetohydrodynamics*, Phy. Rev. Lett. **71**, 1712 (1993).

201. Cobb, J.W., Tajima, T., and Barnes, D.C., *Profile Stabilization of Tilt Mode in a Field-Reversed Configuration*, Phys. Fluids B **5**, 3227 (1993). G30,W18

202. Hernandez, J.V., Tajima, T., and Horton, W., *Neural Net Forecasting for Geomagnetic Activity*, Geophys. Res. Lett. **20**, 2707 (1993). G74

203. Horton, W., Dong, J.Q., Su, X.N., and Tajima, T., *Ion Mixing in the Plasma Sheet Boundary Layer by Drift Instabilities*, J. Geophys. Res. **98A8**, 13377 (1993).

204. Kotschenreuther, M., Berk, H.L., LeBrun, M., Dong, J.Q., Horton, W., Kim, J.-Y., Kishimoto, Y., Ross, D.W., Tajima, T., Valanju, P.M., Wong, H.V., Miner, W., Barnes, D.C., Brackbill, J.U., Ling, K.M., Nebel, R.A., Nystrom, W.D., Byers, J.A., Cohen, B.I., Cohen, R.H., Dimits, A.M., Lodestro, L.L., Mattor, N., Smith, G.R., Williams, T.J., Kerbel, G.D., Dawson, J.M., Sydora, R.D., Carreras, B.A., Dominguez, N., Hedrick, C.L., LeBoeuf, J.-N., Naitou, H., and Kamimura, T., *Simulations for Confinement in Near-Fusion Experiments*, Plasma Physics and Controlled Nuclear Fusion Research vol. 2, (IAEA, Vienna, 1993) p. 11.

205. Nakajima, K., Nakanishi, H., Kawakubo, T., Ogata, A., Kitagawa, Y., Shiraga, H., Kodama, R., Zhang, T., Suzuki, K., Kato, Y., Sakawa, Y., Shoji, T., Nishida, Y., Yugami, N., Tajima,

T., *Laser Wakefield Accelerator Experiments Using 1ps 30TW Nd:glass Laser*, Proc. 1993 Particle Accelerator Conference (IEEE, Washington, D.C., 1993) p. 2556.

206. Fisher, D.L. and Tajima, T., *Superluminous Laser Pulses in an Active Medium*, Phys. Rev. Lett. **71**, 4338 (1993). G61,W34

207. Sato, K., Katayama, H., Miyawaki, F., and Tajima, T., *A Traveling Wave Direct Energy Converter for a D-^{3}He Fusion Reactor*, Proceedings of the 7th International Conference on Emerging Nuclear Systems (Makuhari, Japan, 1993).

208. Hernandez, J., Horton, W., and Tajima, T., *Low Frequency Mobility Response Functions for the Central Plasma Sheet with Application to Tearing Modes*, J. Geophys. Res. **98A4**, 5893 (1993). W17

209. Fisher, D.L. and Tajima, T., *Wakefield Excitation by a Short Laser Pulse*, AIP Proceedings 297, ed. J.W. Wurtele (American Institute of Physics, New York, 1993), p. 335.

210. Tajima, T., Kishimoto, Y., LeBrun, M.J., Gray, M.G., Kim, J.-Y., Horton, W., Wong, V., and Kotschenreuther, M., *Transport in the Self-Organized Relaxed State of Ion Temperature Gradient Instability*, in Ion Temperature Gradient Driven Turbulent Transport, eds. W. Horton, M. Wakatani, and A. Wootton (American Institute of Physics, New York, 1994) p. 255.

211. Kim, J.Y., Kishimoto, Y., Horton, W., and Tajima, T., *Kinetic Resonance Damping Rate of the Toroidal Ion Temperature Gradient Mode*, Phys. of Plasmas **1**, 927 (1994). G27,W16

212. Shibata, K., Nitta, N., Matsumoto, R., Tajima, T., Yokoyama, T., Hirayama, T., and Hudson, H., *Two Types of Interaction Between Emerging Flux and Coronal Magnetic Field*, Proc. X-ray Solar Physics from Yohkoh, eds. Y. Uchida, T. Watanabe, K. Shibata, and H.S. Hudson (Universal Academy Press, Tokyo, 1994) p. 29.

213. Horton, W., Hernandez, J.V., Tajima, T., and Dykhne, A., *Fluctuation-Dissipation Relations for Plasmas in Strongly Inhomogeneous Magnetic Fields*, Physica D **71**, 249 (1994).

214. Kinney, R.M., Tajima, T., McWilliams, J.C., and Petviashvili, N., *Filamentary Magnetohydrodynamic Plasmas*, Phys. Plasmas **1**, 260 (1994). G35,W21

215. Koga, J.K., and Tajima, T., *Particle Diffusion from the Beam-Beam Interaction in Synchrotron Colliders*, Phys. Rev. Lett. **72**, 2025 (1994).

216. Beklemishev, A.D. and Tajima, T., *Magnetless Magnetic Fusion*, Physics of High Energy Particles in Toroidal Systems, eds. T. Tajima and M. Okamoto (American Institute of Physics, New York, 1994) p. 247.

217. Makowitz, H., Abrashoff, J.D., Landman, W.H., Albano, R.K., Tajima, T., and Larson, J.D., *The Intense Slow Positron Source Concept: A Theoretical Perspective on a Proposed INEL Facility*, in Proc. of Fifth International Workshop on Slow-Positron Beam Techniques for

Solids and Surfaces (Jackson Hole, Wy., 1992), eds. E. Ottewitte and A.H. Weiss (American Institute of Physics, New York, 1994) p. 305.

218. Tajima, T., *Cosmological Plasmas and Structure Formation* (in Japanese), Butsuri **49**, 879 (1994).

219. Nakajima, K., Kawakubo, T., Nakanishi, H., Ogata, A., Kato, Y., Kitagawa, Y., Kodama, R., Mima, K., Shiraga, H., Suzuki, K., and Zhang, T., Sakawa, Y., Shoji, T., Nishida, Y., Yugami, N., Downer, M., Fisher, D., Newberger, B., and Tajima, T., *A Proof-of Principle Experiment of Laser Wakefield Acceleration*, Phys. Scripta **T52**, 61 (1994). G39,W23

220. Horton, W., Dong, J.Q., and Tajima, T., *Energy Conserving Nonlinear Dynamics Model for Substorms*, in Magnetospheric Physics (American Geophysical Union, San Francisco, CA, 1994) p. 550-551.

221. Nakajima, K., Kawakubo, T., Nakanishi, H., Ogata, A., Kitagawa, Y., Kodama, R., Mima, K., Shirage, H., Suzuki, K., Yamakawa, K., Zhang, T., Kato, Y., Fisher, D., Downer, M., Tajima, T., Sakawa, Y., Shoji, T., Yugami, N., Nishida, Y., *Proof-of-Principle Experiments of Laser Wakefield Acceleration Using a 1ps 10TW Nd:Glass Laser*, in AIP Conference Proceedings 335, ed. P. Schvessow (AIP, NY, 1995) p. 146.

222. Meerson, B., Petviashvili, N., and Tajima, T., *Multifaceted Asymmetric Radiation from the Edge of Tokamak Plasmas (MARFE): Pattern Formation under Nonlocal Constraints*, Phys. Plasmas **2**, 414 (1995).

223. Koga, J.K. and Tajima, T., *Collective Effects of Beam-Beam Interaction in a Synchrotron Collider*, AIP Proceedings on SSC Accelerator Physics, eds. Y.T. Yan, J.P. Naples, M.J. Syphers (American Institute of Physics, New York, 1995) p. 215.

224. Horton, W., Hernandez, J., and Tajima, T., *Collisionless Resistivity and Velocity Power Spectrum for the Geomagnetic Tail*, Geophysical Monograph **86**, Space Plasmas: Coupling Between Small and Medium Scale Processes (AGU 1995) p. 223.

225. Koga, J.K. and Tajima, T., *The δ-F Algorithm for Beam Dynamics*, J. Comput. Phys. **116**, 314 (1995).

226. Nakajima, K., Fisher, D., Kawakubo, T., Nakanishi, H., Ogata, A., Kato, Y., Kitagawa, Y., Kodama, R., Mima, K., Shiraga, H., Suzuki, K., Yamakawa, K., Zhang, T., Sakawa, Y., Shoji, T., Nishida, Y., Yugami, N., Downer, M. and Tajima, T., *Observation of Ultrahigh Gradient Electron Acceleration by a Self-Modulated Intense Short Laser Pulse*, Phys. Rev. Lett. **74,** 4428 (1995). G614, W366

227. Fisher, D.L., Tajima, T., Downer, M.C., and Siders, C.W., *Envelope Evolution of a Laser Pulse in an Active Medium*, Phys. Rev. E **51**, 4860 (1995).

228. Matsumoto, R., and Tajima, T., *Magnetic Viscosity by Localized Shear Flow Instability in Magnetized Accretion Disks*, Astrophys. J **445**, 767 (1995). G233, W149

229. Tajima, T., *Magnetically Constricted Intergalactic Plasmas*, to be published in Research Trends in Plasma Physics ed. V. Stefan (American Institute of Physics, New York, 1995).

230. Cohen, B.I., Barnes, D.C., Dawson, J.M., Hammett, G.W., Lee, W.W., Kerbel, G.D., Leboeuf, J.-N, Liewer, P.C., Tajima, T., and Waltz, R.E., *The Numerical Tokamak Project: Simulation of Turbulent Transport*, Comp. Phys. Comm. **87**, 1-15 (1995). G29,W17

231. Oliveira, S.R. and Tajima, T., *Generalized Relaxation Theory and Vortices in Plasmas*, Phys. Rev. E **51**, 4287 (1995).

232. Kinney, R., McWilliams, J.C. and Tajima, T., *Coherent Structures and Turbulent Cascades in Two-Dimensional Incompressible Magnetohydrodynamic Turbulence*, Phys. Plasmas **2**, 3623 (1995). G78, W53

234. K. Nakajima, T. Kawakubo, H. Nakanishi, A. Ogata, Y. Kitagawa, R. Kodama, K. Mima, H Shiraga, K Suzuki, K Yamakawa, T Zhang, Y Kato, D. Fisher, M. Downer, T. Tajima, Y. Sakawa, T. Shoji, N. Yugami, Y. Nishida, T. Tajima, *Proof-of-principle experiments of laser wakefield acceleration using a 1 ps 10 TW Nd: glass laser*, AAC Proceedings (The sixth advanced accelerator concepts workshop, NewYork, 1995).

233. Kishimoto, Y., Tajima, T., Fisher, D.L., Mima, K., and Koga, J., *Beam Cooling by Using Laser-Undulator Beat Wave*, JAERI-CONF 95-005, **2**,339 (1995).

234. Tajima, T., *高質度の荷電粒子系に向けて (Toward High Quality Charged-Particle Systems)*, 原子力工業(Atomic Energy Industries), **41**, 45 (1995).

235. Barnett, D.M., Tajima, T., Nishihara, K., Ueshima, Y., and Furukawa, H, *The Lyapunov Exponent of a Many Body System and its Transport Coefficients*, Phys. Rev. Lett. **76**, 1812 (1996). G28,W25

236. Meerson, B., Megged, E., and Tajima, T., *On the Quasi-hydrostatic Flows of Radiatively Cooling Self-Gravitating Gas Clouds*, Astrophys. J. **457**, 321 (1996).

237. C. Siders, S. Le Blanc, D. Fisher, T. Tajima, M. Downer, A. Babine, A Stepanov, and A. Sergeev, *Measurement of laser wakefield oscillations by femtosecond longitudinal interferometry,* in Ultrafast Phenomena X (Springer, in Chemical Physics, 1996), Eds. P.F. Barbara, J.G. Fujimoto, W.H. Knox, and W. Zinth.

238. Siders, C.W., Le Blanc, S.P. Tajima, T., Downer, M.C., Babine, A., Stepanov, A., and Sergeev, A., *Plasma-Based Accelerator Diagnostics Based upon Longitudinal Interferometry with Ultrashort Optical Pulses*, IEEE Trans. Plasma Sci., **24**, 301 (1996). G48,W24

239. Kishimoto, Y., Tajima, T., Fisher, D.L., and Mima, K., *Cooling and Phase Space control by Using Laser-Undulator Beat Wave*, The Future of Accelerator Physics: The Tamura Symposium Proceedings ed. T. Tajima, (Am. Ins. of Phys., New York, 1996) p.408.

240. Koga, J.K., Tajima, T., and Kishimoto, Y., *Cooling of Charged Particle Beams Using Coherent Synchrotron Radiation*, The Future of Accelerator Physics: The Tamura Symposium Proceedings ed. T. Tajima (Am. Ins. of Phys., New York, 1996) p. 424.

241. Kishimoto, Y., Tajima, T., Horton, W., Le Brun, M. and Kim, J.Y., *Theory of Self-Organized Critical Tranport in Tokamak Plasmas*, Phys. Plas. **3**, 1289 (1996). G93, W62

242. Siders, C.W., LeBlanc, S.P., Fisher, D., Tajima, T., Downer, M.C., Babine, A., Stepanov, A., and Sergeev, A., *Laser Wakefield Excitation and Measurement by Femtosecond Longitudinal Interferometry*, Phys. Rev. Lett. **76**, 3570 (1996). G270, W163

243. Fisher, D. and Tajima, T., *Enhanced Raman Forward Scattering*, Phys. Rev. E **53**, 1844 (1996). G57,W31

244. Horton, W., Tajima, T., Dong, J-Q, Kishimoto, Y., and Kim, J-Y., *Thermal Transport Barriers in Tokamaks in the Sheared Mass Flows*, Comments on Plasma Physics and Controlled Fusion, **17**, 205 (1996).

245. Hernandez, J.V., Vannucci, A., Tajima, T., Lin, Z., Horton, W. and McCool, S.C., *Neural Network Prediction of Some Classes of Tokamak Disruptions*, Nucl. Fus. **36**, 1009 (1996). G56,W33

246. Barnett, D.M. and Tajima, T., *Fluctuations and the Many-Body Lyapunov Exponent*, Phys. Rev. E **54**, 6084-6092, (1996). G28

247. Steinhauer, L.C., Barnes, D.C., Binderbauer, M., Tajima, T. et al., *FRC 2001: A White Paper on FRC Development in the Next Five Years*, Fusion Tech. **30**, 116 (1996).

248. Horton, W., Tajima, T., J.Q. Dong, Kishimoto, Y., and J-Y Kim, *Ion Transport Analysis of a High-Beta Poloidal JT-60U Discharge*, Plasma Phys. Control. Fusion **38**, 1323 (1996).

249. Dorland, W., Kotschenreuther, M., Beer, M.A., Hammett, G.W., Waltz, R.E., Dominguez, R.R., Valanju, P.M., Miner, Jr., W.H., Dong, J.Q., Horton, W., Waelbroeck, F.L., Tajima, T. and LeBrun, M.J., *Comparisons of Nonlinear Toroidal Turbulence Simulations with Experiment*, Plasma Physics and Controlled Nuclear fusion Research 1994 (IAEA-CN-60/D-P6, Vienna, 1996) **3**, p. 463. W22

250. Kishimoto, Y., Tajima, T., LeBrun, M.J., Horton, W., Kim, J.-Y., Dong, J.Q., Waelbroeck, F.L., Tokuda, S., Kawanobe, M. and Fukuda, T., *Self-Organized Critical Gradient Transport and Shear Flow Effects for the Ion Temperature Gradient Mode in Toroidal Plasmas*, Plasma Physics and Controlled Nuclear fusion Research 1994 (IAEA-CN-60/D-10, Vienna, 1996) **3**, p. 299.

251. Valinia, A., and Tajima, T., Matsumoto, R., Makishima, K., and Shibata, K., *Magnetically Constricted Plasmas in Clusters of Galaxies, in* Clusters, Lensing, and the Future of the Universe, vol. 88, eds. V. Trimble and A. Reisenegger, (ASP Conf.Ser.81, Washington, 1996) Vol. **88**, p. 205.

252. Tajima, T., *Challenge of 'Experimental Astrophysics' by T^3 Lasers*, Temmon Geppo **89**, 447 (1996).

253. Kim, J.-Y, Kishimoto, Y., Wakatani, M. and Tajima, T., *Poloidal Shear Flow Effect on Toroidal Ion Temperature Gradient Mode: A Theory and Simulation,* Phys. Plasmas **3**, 3689 (1996). G73,W38

254. Ono, Y., Yamada, M., Akao, T., Tajima, T., and Matsumoto, R., *Ion Acceleration and Direct Ion Heating in Three-Component Magnetic Reconnection,* Phys. Rev. Lett. **76**, 3328 (1996). G272, W150

255. Horton, W., Tajima, T. and Doxas, I., *Energy and Momentum Transport in a Global Night-Side Low-Dimensional Magnetospheric Model*, Physics of Space Plasmas (Proceedings of the 1995 Cambridge Symposium/Workshop in Geoplasma Physics on "Multiscale Phenomena in Space Plasmas", eds. T. Chang and J.R. Jasperse) **14**, 217-225 (1996).

256. Horton, W., Tajima, T., Kim, J-Y., Kishimoto, Y. and Ottaviani, M., *Coherent Drift-Wave Structures in Toroidal Plasmas*, J. Plasma Phys. **56**, 605 (1996).

257. Ryutova, M.P., Kaisig, M., Tajima, T., *The evolution of magnetic structures due to "magnetosonic streaming*, Astrophysical Journal **459**(2), 744-759 Part 1(1996).

258. S.Leblanc, M. Downer, T. Tajima, C. Siders, R. Wagner, S.-Y. Chen, A. Maksimchuk, G. Mourou, and D. Umstadter, *Temperoral characterization of plasma wakefields driven by intense femtosecond laser pulses*, in Applications of High Filed and Short Wavelength Sources VII, 1997 OSA technical Digest Series (OPA, Washington, DC, 1997), vol.7, p.240.

259. Rau, B., C.W. Siders, S.P. LeBlanc, D.L. Fisher, Tajima, T., and M.C. Downer., *Spectroscopy of Short, Intense Laser Pulses Due to Gas Ionization Effects*, J. Opt. Soc. Am. **B14**, 643 (1997).

260. Kishimoto, Y., Koga, J.K., Tajima, T., and Fisher, D.L., *Phase Space Control and Consequences for Cooling by Using a Laser-Undulator Beat Wave*, Phys. Rev. E **55**, 5948 (1997).

261. Daniel, J. and Tajima, T., *Electromagnetic Waves in a Strong Schwarzschild Plasma,* Phys. Rev. D **55**, 5193 (1997). G37,W23

262. Rau, B., Tajima, T. and Hojo, H., *Coherent Electron Acceleration by Subcycle Laser Pulses*, Phys. Rev. Lett. **78**, 3310 (1997). G121, W97

263. Chou, W., Tajima, T., Matsumoto, R. and Shibata, K., *Linear and Nonlinear Evolution of the Parker Instability of Magnetic-Flux Sheets in Co-Rotating Coordinates,* Publ. Astron. Soc. Jpn. **49**, 389 (1997).

264. Rau, B., Tajima, T. and Hojo, H., *Microbunching and Coherent Acceleration of Electrons by Subcyclic Laser Pulses*, Advanced Accelerator Concepts, ed. S. Chattopadhyay (AIP, New York, 1997) p. 766.

265. Xie, M., Tajima, T., Yokoya, K. and Chattopadyay, S., *Studies of Laser-Driven 5TeV e^+e^- Colliders in Strong Quantum Beamstrahlung Regime*, (AIP Conference Proceedings, New York, 1997), **398**, p. 233-242.

266. Siders, C.W., Le Blanc, S.P., Rau, B., Fisher, D., Tajima, T., Downer, M.C., Babine, A., Stepanov, A. and Sergeev, A., *First Measurement of Laser Wakefield Oscillations by Longitudinal Interferometry,* Advanced Accelerator Concepts, ed. S. Chattopadhyay (AIP, New York, 1997) p. 372.

267. Ueshima, Y., Nishihara, K., Barnett, D.M., Tajima, T. and Furukawa, H., *Particle Simulation of Lyapunov Exponents in One-Component Strongly Coupled Plasmas,* Phys. Rev E **55**, 3439 (1997).W22

268. Ueshima, Y., Nishihara, K., Barnett, D.M., Tajima, T. and Furukawa, H., *Relation Between Lyapunov Exponent and Dielectric Response Function in Dilute One Component Plasmas*, Phys. Rev. Lett. **79**, 2249 (1997).

269. Tajima, T. and Niu, Q., *Extended Vacuum Solutions and Their Elementary Excitations of the Yang-Mills Gauge Theory,* Mod. Phys. Lett. A **12**, 2037 (1997).

270. Cable, S. and Tajima, T., *1/f Noise in Two Dimensional Fluids*, Comm. Plasma Phys. Controlled Fusion **18**, 145 (1997).

271. Horton, W., Tajima, T., Dong, J.Q., Kishimoto, Y. and Kim, J-Y., *Ion Transport Analysis of a High Beta-Poloidal JT-60U Discharge,* Plasma Phys. Control. Fusion **39**, 83 (1997).

272. Tajima, T., Chattopadhyay, S. and Xie, M., *Quantum-Beamsstrahlung Laser Collider,* ICFA Beam Dynamics Newsletter **15**, 14 (1997).

273. Kishimoto, Y., Kim, J.-Y., Fukuda, T., Ishida, S., Fujita, T., Tajima, T., Horton, W., Furnish, G. and LeBrun, M.J., *Effect of Weak/Negative Magnetic Shear and Plasma Shear Rotation on Self-Organized Critical Gradient Transport in Toroidal Plasmas—Formation of Internal Transport Barrier*, in Fusion Energy 1996 (IAEA 16th Conference Proceedings, Montreal, Canada, 1997) **2**, 581.

274. Tajima, T., *Prospect for Compact Medical Laser Accelerators,* J. Jpn. Soc. Ther. Radiol. Oncol. **9**, Suppl. 2, 83 (1997). G32

275. Matsumoto, R., Tajima, T., Chou, W.C., Okubo, A. and Shibata, K., *Formation of a Kinked Alignment of Solar Active Regions*, Astrophys. J. **493**, L43 (1998). G68,W57

276. Tajima, T. and Chen, P.S., *Near- and long-term applications of plasma-based accelerators*, Nuclear Inst. Methods Phys. Res., A **410**, 344 (1998).

277. Kim, J.-Y., Kishimoto, Y., Horton, W., Tajima, T. and Wakatani, M., *On the Radial Profile and Scaling of Ion Thermal Conductivity from Toroidal ITG Mode*, Comm. Plasma Phys. Controlled Fusion **18**, 293 (1998).

278. Ottinger, M.B., Tajima, T. and Hiramoto, K., *Space-Charge Effects on the Beam Resonance Instability*, Proc. Pat. Accel. Conf. (1998).

279. Daniel, J. and Tajima, T., *Outbursts from a Black Hole via Alfvén Wave to Electromagnetic Wave Mode Conversion,* Astrophys. J. **498**, 296 (1998). G43,W32

280. Raizen, M.G., Koga, J., Sundaram, B., Kishimoto, Y., Takuma, H., Tajima, T., *Stochastic Cooling of Atoms Using Lasers*, Phys. Rev. A **58**, 4757 (1998). G67,W53

281. Moribayashi, K., Sasaki, A., and Tajima, T., *Ultrafast X-ray Processes with Hollow Atoms*, Phys. Rev. A **58**, 2007 (1998). G76, W63

282. Hojo, H., Rau, B., and Tajima, T., *Particle Acceleration and Coherent Radiation by Subcycle Laser Pulses,* Nucl. Instr. Meth. Phys. Res. **A410**, 509-513 (1998).

283. Rau, B. and Tajima, T., *Strongly Nonlinear Magnetosonic Waves and Ion Acceleration*, Phys. of Plasmas **5**, 3575 (1998). G32,W29

284. Matsuzaki, T., Matsumoto, R., Tajima, T., Shibata, K., *Three-dimensional local MHD simulations of high states and low states in magnetic accretion disks,* Hot Universe ISU Symposia (**188**), 400-401 (1998).

285. Hayashi, M., Tajima, T. and Lovelace, R., *Direct Energy Extraction from Rotating Plasmas*, Comm. Modern Physics **1**, C73 (1999).

286. Kishimoto, Y., Kim, J-Y., Horton, W., Tajima, T., LeBrun M.J., Shirai, H., *Toroidal Mode Structure in Weak and Reversed Magnetic Shear Plasmas and its Role in the Internal Transport Barrier*, Plasma Phys. Cont. Fusion **40**, A663 (1999). G81,W28

287. Chou, W. C., and Tajima, T., *Dynamics of Plasma Close to the Horizon of a Schwarzschild Black Hole,* Astrophys. J. **513**, 401 (1999)

288. Kishimoto, Y., Kim, J-Y., Horton, W., Tajima, T., LeBrun, M.J., Dettrick, S., Li, J.Q., Shirai, H., *Discontinuity Model for Internal Transport Barrier Formation in Reversed Magnetic Shear Plasmas*, Fusion Energy 1998 (IAEA, Vienna, 1999). W44

289. Vannucci, A., Oliveira, K.A., Tajima, T., Tajima, Y.J., *Forecast of Text Plasma Disruptions Using Soft X Rays As Input Signal in a Neural Network*, Nucl. Fusion **39**, 255 (1999). G48,W26

290. Ueshima, Y., Kishimoto, Y., Sasaki, A., and Tajima, T., *Laser Larmor X-ray Radiation from Low-Z Matter*, Laser Part. Beams, **17**, 45 (1999). G78,W53

291. Moribayashi, K., Sasaki, A., and Tajima, T. *X-ray emission by ultrafast inner-shell ionization from vapors of Na, Mg, and Al*, Phys. Rev. A **59**, 2732 (1999). G40,W31

292. Chou, W. C., Tajima, T., Matsumoto, R., and Shibata, K., *Dynamics of Local Isolated Magnetic Flux Tubes in a Rapidly Rotating Stellar Atmosphere*, Publ. Astron. Soc. Jpn **51**,103 (1999).

293. Furnish, G., Horton, W., Kishimoto, Y., LeBrun, M., and Tajima, T., *Global Gyrokinetic Simulation of Tokamak Transport*, Phys. Plasmas **6**, 1227 (1999). W16

294. Matsumoto, R., Valinia, A., Tajima, T., Makishima, K., Shibata, K. and Tanuma, S., *Formation of Localized Strongly Magnetized Regions in Galaxies and Clusters of Galaxies*, in COSPAR Proceedings, ed. P.C. Agrawal (1999).

295. Matsumoto, R., Tonooka, H., Tajima, T., Chou, W., and Shibata, K., *Three-Dimensional MHD Simulations of the Emergence of Twisted Flux Tubes*, in COSPAR Proceedings, ed. P.C. Agrawal (1999).

296. Tajima, T., Kishimoto, Y., and Downer, M., *Optical Properties of Cluster Plasma*, Phys. Plasmas, **6**, 3759 (l999). G102, W71

297. Zhidkov, A.G., Sasaki, A., Tajima T., Auguste, T., D'Olivera, R., Hulin, S., Monot, P., Faenov, A. Ya, Pikuz, T.A., and Skobelov, I.Yu, *Direct Spectroscopic Observation of Multiple-Charged-Ion Acceleration by an Intense Femtosecond-Pulse Laser*, Phys. Rev. E **60**, 3273-3278 (1999). G83, W61

298. Chen, P. S., and Tajima, T., *Testing Unruh Radiation with Ultraintense Lasers*, Phys. Rev. Lett. **83**, 256 (1999). G239, W142

299. Tajima, T., Cheshkov, S., Horton, W., and Yokoya, K., *A Nonlinear Particle Dynamics Map of Wakefield Acceleration in a Linear Collider*, in Advanced Acceleration Concepts AIP Conference Proceedings 472 ed. W. Lawson (AIP Press, New York, 1999) p.153.

300. Cheshkov, S., Tajima, T., Horton, H., and Yokoya, K., *Particle Dynamics and its Consequences in Wakefield Acceleration in a High Energy Collider*, in Advanced Acceleration Concepts, AIP Conference Proceedings 472 ed. W. Lawson (AIP Press, New York, 1999) p.343.

301. Sasaki, A., Utsumi, T., Moribayashi, K., Tajima, T., and Takuma, H, *Calculation of Ion Abundance of Collisional x-ray Lasers Using Thin Foil Targets*, Rev. Laser Engin. **27**, 185 (1999).

302. Tsintsadze, L.N., Nishikawa, K., Tajima, T., and Mendonca, J.T., *Stationary Periodic and Solitary Waves Induced by a Strong Short Laser Pulse*, Phys. Rev. E **60**, 7435-7440 (1999). G28,W24

303. Barnett, D.M., Tajima, T., and Ueshima, Y., *Barnett et al. Reply*, Phys. Rev. Lett. **83,** 2677 (1999).

304. Chen, P.S., Spitkovsky, A., Tajima, T., *Unruh Radiation from Time-Varying Linear Acceleration in Ultra-Intense Lasers*, in "Quantum Aspects of Beam Physics" ed. P.S. Chen (World Scien., Singapore, 1999) pp 634-642.

305. Zhidkov, A., Sasaki, A., and Tajima, T., *Simulation of Various Ionization Effects in Overdense Plasmas Irradiated by a Subpicosecond Pulse Laser*, J. Plasma Fusion Res, **2,** 414 (1999).

306. Vannucci, A., Oliveira, K.A., Tajima, T., Tajima, Y.J., *Forecast of Text Plasma Disruptions Using Soft X-rays as Input Signal in a Neural Network*, in Fusion Energy 1998 (IAEA, Vienna, 1999) **3,** p.843.

307. Weigel, R.S., Horton, W., Tajima, T., Detman, T., *Forecasting auroral electrojet activity from solar wind input with neural networks*, Geophysical Research Lett. **26**(10), 1353-1356 (1999). G43

308. Moribayashi, K., Sasaki, A., Ueshima, Y., Tajima, T., *Inner-shell ionization x-ray laser and hollow atom x-ray laser,* X-ray Lasers 1998 Inst. of Phys. Conference Series **159**, 317-320 (1999).

309. Moribayashi, K., Sasaki, A., Ueshima, Y., Tajima, T., *X-ray pumping source for inner-shell ionization x-ray laser,* X-ray Lasers 1998 Inst. of Phys. Conference Series **159**, 321-324 (1999).

310. Sasaki, A., Utsumi, T., Moribayashi, K., Kado, M., Hasegawa, N., Tajima, T., Takuma, H., *Modeling of electron collisional excited x-ray lasers using short pulse laser pumping,* X-ray Lasers 1998 Inst. of Phys. Conference Series **159**, 387-390 (1999).

311. P. S. Chen, A. Spitkovsky, and T. Tajima, *Unruh radiation from time-varying linear acceleration in ultraintense lasers*, in "Quantum Aspects of Beam Physics" ed. P.S. Chen (World Scientific, Singapore, 1999) p. 634.

312. Zhidkov, V., Sasaki, A., and Tajima, T., *Emission of MeV Multiply-Charged Ions From Metallic Foils Irradiated with an Ultrashort Laser Pulse*, Phys. Rev. E **61**, R2224-R2227 (2000). G59,W21

313. Zhidkov, A., Sasaki, A., and Tajima, T., *Energetic-Multiple-Charged-Ion Sources on Short-Laser-Pulse Irradiated Foils*, Rev. Sci., Instr. **71**, 931-034 (2000).

314. Noguchi, K., Tajima, T., Matsumoto, R., *Robustly Unstable Eigenmodes of the Magnetoshearing Instability in Accretion Disks, Astrophys*. J. **541**, 802-810 (2000).

315. Cheshkov, S., Tajima, T., Horton, W. and Yokoya, K., *Particle dynamics in multistage wakefield collider*, Phy. Rev. Special Topics-Accel. Beams **3**, 071301 (2000). G32

316. Rau, B., Tajima, T., and Hojo, H., *Rau, Tajima, and Hojo Reply*, Phys. Rev. Lett. **84**, 3211 (2000).

317. Cheshkov, S., and Tajima, T., *Depolarization and Luminosity Issues in a High Energy Linear Collider*, Int. J. Mod. Phys. A**15**, 2555-2564 (2000).

318. Chou. W.C., Matsumoto, R., Tajima, T., Umekawa, M., Shibata, K., *Dynamics of the Parker-Jeans instability in a galactic gaseous disk*, Ap. J. **538**, 710-727 (2000).W17

319. Tsintsadze, L.N., Tajima, T., Nishikawa, K., Koga, J.K., Nakagawa, K., and Kishimoto, Y *Generation of Low-Frequency Electromagnetic Waves by Spectrally Broad Intense Laser Pulses in a Plasma*, Physica Scrt. **T84**, 94-97 (2000).

320. Chiu, C., Cheshkov, S., and Tajima, T., *High Energy Laser-Wakefield Collider with Synchronous Acceleration*, Phys. Rev. Spec. Top. Accel. Beams **3**, 101301 (2000). W23

321. Koga, J.K., Naumova, N., Kando, M., and Tsintsadze, L.N., Kakajima, K., Bulanov, S.V., H., Dewa, H., and Kotaki, H., Tajima, T., *Fixed Blueshift of High Intensity Short Pulse Lasers Propagating in Gas Chambers*, Phy. Plasmas, **7**,12 5223 (2000). G34,W24

322. Sasaki, A., Utsumi, T., Moribayashi, K., Tajima, T., and Takuma, H. J., *Development of a Collisional Radiative Model of X-ray*, Quat. Spectrosc. Radiat Transf. **65** 501 (2000).

323. Tajima, T, Soyama, K, Koga, J., and Takuma, H., *Laser Interaction with Neutrons*, J. Phys. Soc. Jpn, **69**, 3840-3846 (2000).

324. Kishimoto, Y., Kim, J.Y., Horton, W., Tajima, T., LeBrun, M.J., Dettrick, S.A., Li, J.Q., Shiai, S., *Discontinuity model for internal transport barrier formation in reversed magnetic shear plasmas*, Nuclear Fusion **40** (3Y) 667-676 Sp. Iss. 3 (2000). G59

325. Zhidkov, A., Sasaki, A., Utsumi, T., Fukumoto, I., Tajima, T., Saito, F., Hironaka, Y., Nakamura, K. G., Kondo, K., Yoshida, M., *Prepulse effects on the interaction of intense femtosecond laser pulses with high-Z solids*, Phys. Rev. **E62** (5) 7232-7240 Part B (2000). G90,W56

326. Takahashi, Y., Hillman, L.W., Tajima, T., *Relativistic Lasers and High Energy Astrophysics: Gamma Ray Bursts and Highest Energy Acceleration*, in High Field Science, Eds., T. Tajima, K., Mima, and H. Baldis (Kluwer, NY, 2000).pp171-221. W16

327. Kishimoto, Y., and Tajima, T., *Strong Coupling between Clusters and Radiation*, High Field Science, eds. T. Tajima, K. Mima, and H. Baldis (Kluwer, NY, 2000).pp 83-96.

328. Hartmann, F.V., Baldis, H.A., Landahl, E.C. Luhmann, N.C., Tajima, T., Troha, A.L., and van Meter, J.R., *Nonlinear Vacuum Electron-Photon Interactions at Relativistic Intensities*, in High Field Science, eds. T. Tajima, K. Mima, and H. Baldis, (H.,Kluwer NY, 2000) pp.94-114.

329. Cai, Y., Chao, A.W., Tzenov, S., I., and Tajima, T., *Simulation of the beam-beam effects in e+e- storage rings with a method of reduced region of mesh*, Phys. Rev. Special Topics, **4**, 011001 (2001). G42

330. Tajima, T., Kishimoto, Y., and Masaki, T., *Cluster Fusion*, Physica Scrt. **T89**, 45-48 (2001).W17

331. Breitling, F, Weigel, R.S., Downer, M.C, Tajima, T., *Laser Pointing Stabilization and Control in the Submicroradian Regime with Neural Networks*., Rev. Sci. Inst. **72**, 1339- 1342 (2001).

332. Tajima, T., *Tribute to John M. Dawson: Pre-historic Days of the Dawson-Tajima 1979 Paper*, in Advanced Accelerator Concepts, eds. P. L. Colestock and S. Kelly. (AIP, NY, 2001**)** p.23.

333. Tajima, T., *Summary of Working Group 7 on Exotic Acceleration Schemes*, in Advanced Accelerator Concepts, eds. P. L. Colestock and S. Kelly. (AIP, NY, 2001**)** p.77.

334. Tajima, T., *Emittance Control in Laser Wakefield Accelerator* in Advanced Accelerator Concepts, eds. P. L. Colestock and S. Kellly. (AIP, NY, 2001**)** p.163.

335. Rundquist, A.R., LeBlanc, S.P., Gaul, E.W., Cheshkov, S., Grigsby, F.B., Tajima, T., and Downer, M.C., *Optimization of Laser Wakefield Acceleration,* in Advanced Accelerator Concepts, eds. P. L. Colestock and S. Kelly. (AIP, NY, 2001**)** p.177.

336. Chen, P., Cheshkov, S., Ruth, R., Tajima, T., *An ultra-high gradient plasma wakefield booster*, in Advanced Accelerator Concepts, eds. P. L. Colestock and S. Kelly. (AIP, NY, 2001**)** p.903.

337. Cheshkov, S., Tajima, T., Chiu, C., and Breitling, F., *Emittance control in laser wakefield accelerator,* in Advanced Accelerator Concepts, eds. P. L. Colestock and S. Kelly. (AIP, NY, 2001**)** p. 163.

338. Ma, C.-M., Tajima, T., Shahine, B., Lee, M.C., Guerrero, T., and Boyer, A.L., *Laser accelerated proton beams for radiation therapy*, Med. Phys.**28**, 1236(2001).

339. Zhidkov, A.G., Sasaki, A., Fukumoto, I., Tajima, T., Auguste, T., D'Oliveira, P., Hulin, S., Mont, P., Faenov, A.Y., Pikuz, T.A., Skobelev, I.Y., *Pulse duration effect on the distribution of energetic particles produced by intense femtsecond laser pulses irradiating solids*, Phys. of Plasmas **8** (8), 3718-3723 (2001). G69,W49

340. Naumova, N.M., Koga, J., Nakajima, K., Tajima, T., Eshirkepov, T.Z., Bulanov, S.V., Pegoraro, F., *Polarization, hosing and long time evolution of relativistic laser pulses,* Phys. of Plasmas **8** (9), 4149-4155 (2001). G66, W57

341. Auguste, T., Faenov, A.Y., Fukumoto, I., Hulin, S., Magunov, A.I., Mont, p., D'Oliveira, P., Pikuz, T.A., Sasaki, A., Sharkov, B.Y., Skobelev, I.Y., Tajima, T., Zhidkov, A.G., *Observation of MeV multicharged ions and hot electrons accelerated by a 65-fs laser pulse,* Journal of Quantitative Spectroscopy & Radiative Transfer **71** (2-6), 147-156 (2001). W16

342. Zhidkov, A.G., Zhiglei, L.V., Sasaki, A., Tajima, T., *Short-laser-pulse-driven emission of energetic ions intoa solid target from a surface layer spalled by a laser prepulse,* Applied Phys. A-materials Science & Processing **73**, 741-474 (2001). G25,W17

343. Esirkepov, T.Zh., Bulanov, S.V., Nishihara, K., Tajima, T., Pegoraro, F., Khoroshkov, V.S., Mima, K., Daido, H., Kato, Y., Kitagawa, Y., Nagai, K., and Sakabe, S., *Proposed Double-Layer Target for the Generation of High-Quality Laser-Accelerated Ion Beams,* Phys. Rev. Lett.**89**, 175003(2002) G390, W277

344. Fourkal, E., Shahine, B., Ding, M., Li, J.S., Tajima, T., Ma, C.-M., *Particle in cell simulation of laser-accelerated proton beams for radiation therapy,* Med. Phys. **29**,2788 (2002). G199, W144

345. Kishimoto, Y., Masaki, T., and Tajima, T., *High energy ions and nuclear fusion in laser-cluster interaction,* Phys. of Plasmas **9**, 589-601(2002). G102, W77

346. Tajima, T. and Mourou, G., *Zettawatt-exawatt lasers and their applications in ultrastrong-field physics,* Phys.Rev. STAB **5,** 031301(2002). G367, W251

347. Kishimoto, Y., Masaki, T., and Tajima, T., *Laser-Cluster Interaction for Nuclear Fusion,* in Superstrong Fields in Plasmas, eds. M. Lontano, G. Mourou, O. Svelto, and T. Tajima (AIP, NY, 2002) p.264.

348. Horton, W., Porcelli, Zhu, P., Aydemir, A., and Tajima, T., *Ignitor physics assessment and confinement projections,* Nucl. Fusion **42,** 169-179(2002).

349. Tajima, T. and Mourou, G., *Superstrong Field Science* in Superstrong Fields in Plasmas, eds. M.Lontano, G.Mourou, O.Svelto, and T.Tajima (AIP, NY, 2002) p.423.

350. Tajima, T. and Mourou, G., *FORUM on Superstrong Fields and High Energy Physics (Summary)*, ibid. p.459.

351. Lontano, M., Bulanov, S., Koga, J., Passoni, M., and Tajima, T., *A kinetic model for the one-dimensional electromagnetic solitons in an isothermal plasma,* Phys. of Plasmas **9**, 2562-2568 (2002). G43,W35

352. Nishimura, A., Ueshima, Y., Sasaki, Ai, and Tajima, T., *Twinkle of Uranium glass reemerging from the past (Tokino kanatakara yomigaeru urangarasu no kagayaki),* Genshiryoku Eye **48**, No.9, 42(2002).

353. Tajima, T., *Intense Laser Development in the World and in Japan,* Nikkei Science, August issue p.90 (2002).

354. Chen, P.S., Tajima, T., and Takahashi, Y., *Plasma wakefield acceleration for ultrahigh-energy cosmic rays,* Phys. Rev. Lett. **89**,161101(2002). G116

355. Bulanov, S., Esirkepov, T., Kamenets. F., Kato, Y., Kuznetsov, A., Nishihara, K., Pegoraro, F., Tajima, T., and Khoroshkov, V., *Generation of high-quality charged particle beams during the acceleration of ions by high-power laser radiation,* Plasma Phys. Rep. **28,**975-991(2002). G51,W45

356. Tajima, T., *High Field Science and Relativistic Engineering*, in Proc. Japan-Hungary Seminar, ed. J. Kanamori (IIAS, Kyoto, 2002).

357. Mourou, G., Tajima, T., *Ultraintense Lasers and Their Applications*, in Inertial Fusion Sciences Applications 2001, (Elsevier SAS, Paris, 2002) p.831.

358. Totsuji, H., Nishii, Y., Tsuruta, K., Fukumoto, I., Chihara, J., Yamagiwa, M., and Tajima, T., *Quantum Simulation of Hot Dense Plasmas,* in Inertial Fusion Science Applications 2001, (Elsevier SAS, Paris, 2002) p.952.

359. Lontano, M., Bulanov, S.V., Califano, F., Esirkepov, T.Zh., Farina, D., Koga, J., Liseikina, T.V., Mima, K., Nakajima, K., Naumoba, N.M., Nishihara, K., Passoni, M., Pegoraro, F., Ruhl, H., Sentoku, Y., Tajima, T., and Vshivkov, V.A., *Relaticistic Electromagnetic Solitons Produced by Ultrastrong Laser Pulses in Plasmas*, in Science of Superstrong Field Interactions (American Institute of physics, USA, 2002) p.87.

360. Kishimoto, Y., Masaki, T., and Tajima, T., *Cluster Dynamics in Strong Fields and Its Application to Fusion Science*, in Science of Superstrong Field Interactions (American Institute of physics, USA, 2002) p.147.

361. Chen, P., Tajima, T., and Takahashi, Y., *Cosmic Plasma Wakefield Acceleration*, in Science of Superstrong Field Interactions (American Institute of physics, USA, 2002) p.178.

362. Chao, A., Pitthan, R., Tajima, T., and Yeremian, D., *Space charge dynamics of bright electron beams*, Phys.Rev. STAB **6,** 024201 (2003). G32,W22

363. Bulanov, S., Esirkepov, T., and Tajima, T., *Light intensification towards the Schwinger limit*, Phys. Rev. Lett. **91**, 085001(2003). G446, W335

364. Tajima, T., *Fundamental physics with an X-ray free electron laser,* Plasma Phys. Rep. **29**, 207(2003).

365. Yasuike, K., Orimo, S., Nishiuchi, M., Suzuki, M., Matsukado, H., Daido, T., Arisawa, T., Kimura, T., and Tajima, T. *Designing and building an integrated target chamber system for high intensity short-pulse laser-target interaction experiments,* Rev. Sci. Inst. **74**, 1819-1823(2003).

366. Matsukado, K., Esirkepov, T., Kinoshita, K., Daido, H., Utsumi, T., Li, Z., Fukumi, A., Hayashi. Y., Orimo, S., Nishiuchi, M., Bulanov, S.V., Tajima, T., Noda, A., Iwashita, Y., Shirai, T., Takeushi, T., Nakamura, S., Yamazaki, A., Ikegami, M., Mihara, T., Morita, A., Uesaka, M., Yoshii, K., Watanabe, T., Hosokai, T., Zhidkov, A., Ogata, A., Wada, Y., and Kubota, T., *Energetic protons from a few- micron metallic foil evaporated by an intense laser pulse,* Phys. Rev. Lett. **91,** 215001(2003). G173, W134

367. Tajima, T., *Ultraintense Laser and Relativistic Engineering,* Review Laser Eng. **31**,707-710(2003).

368. Fourkal, E., Li, J.S., Ding, M., Tajima, T., Ma, C.-M., *Particle selection for laser-accelerated proton therapy feasibility study*, Med. Phys.**30**,1660(2003). G77,W54

369. Bulanov, S. V., Esirkepov, T.Zh., Koga, J., and Tajima T., *Interaction of Electromagnetic Waves with Plasma in the Radiation-Dominated Regime*, Plasma Phys. Rep. **30,** 196-213(2004)[Fizika Plazmy **30,** 221(2004)]. G119, W96

370. Esirkepov, T., Bulanov, S.V., Nishihara, K., and Tajima, T, *Soliton Synchrotron Afterglow in a Laser Plasma,* Phys.Rev.Lett. **92** 255001 (2004). W23

371. Tajima, T., *Coupling of laser and accelerator and the Relativistic Engineering and High Field Science,* Laser Handbook (2nd ed.) (Jpn Laser Soc., Osaka, 2004).

372. Esirkepov, T., Borghesi. M., Bulanov. S. V., Mourou, G., and Tajima, T., *Highly Efficient Relativistic-Ion Generation in the Laser Piston Regime,* Phys. Rev. Lett.**92**, 175003 (2004). G1308, W853

373. Bulanov, S. V., Esirkepov, T. Zh., Koga, J., Tajima, T., and Farina, D., *Concerning the Maximum Energy of Ions Accelerated at the Front of a Relativistic Electron Cloud Expanding into Vacuum,* Plasma Phys. Rep. **30**, 18-29 (2004). G47,W41

374. Tajima, T., *Laser acceleration and high field science* (in Japanese), Parity **19,** 4-11(2004).

375. Chiu, C., Fomytskyi, M. V., Raischel, F., Grigsby, F., Tajima, T., Downer, M., *Laser Electron Accelerators for Radiation Medicine: a Feasibility Study,* Med. Phys. **31** (7) 2042, (2004). G38,W29

376. Kainz, K.K., Hogstrom, K.R., Antolak, J.A., Almond, P.R., Bloch, C.D., Chiu, C., Fomytskyi, M., Raischel, F., Downer, M., and Tajima, T., *Dose properties of a laser accelerated electron beam and prospects for clinical application,* Med, Phys. **31** (7) 2053 (2004). G40,W24

377. Noda, A., Fadil, H., Fujimoto, S., Ikegami, M., Iwashita, Y., Nakamura, S., Shirai, T., Tanabe, M., Tongu, H., Matsukado, K., Noda, K., Shibuya, S., Takeuchi, T., Yamada, S., Daido, H., Kato, Y., Tajima, T., Beutelspacher, M., Grieser, M., and Syresin, E., *Laser Equipped Ion Storage and Cooler Ring, S-LSR.*, Proc. APAC 2004, 482-486(2004).

378. Tajima, T., Book review: (Yoshizawa, A., Itoh, S-I., Itoh, K.,) *Plasma and Fluid Turbulence: Theory and Modelling,* Appl. Mech. Rev. **57,** B5 (2004).

379. Bulanov, S.V., Daido, H., Esirkepov, T.Zh., Khoroshkov, V.S., Koga, J., Nishihara, K., Pegoraro, F., Tajima, T., and Yamagiwa, M., *Feasibility of Using Laser Ion Accelerators in Proton Therapy*, AIP Conference Proceedings(2004). Eds Grozdanov, T., and Hadzivski, L, **740**, p. 414. W21

380. Pegoraro, F., Atzeni, S., Borghesi, M., Bulanov, S., Esirkepov, T., Honrubia, J., Kato, Y., Khoroshkov, V., Nishihara, K., Tajima, T., Temporal, M., Willi, O., *Production of ion beams in high-power laser-plasma interactions and their applications*, Laser and Particle Beams **22** (1), 19-24 (2004). G31,W24

381. Zhidkov, A., Koga, J., Eshirkepov, T., Hosokai, T., Uesaka, M., Tajima, T., *Optical-field-ionization effects on the propagation of an ultraintense laser pulse in high-Z gas jets,* Phys. Rev. **E 69** (6), Art. No. 066408 Part 2 (2004).

382. Esirkepov, T., Bulanov, S., and Tajima, T., *Flying mirrors: Relativistic plasma wake caustic light intensification,* in "Quantum Aspects of Beam Physics", eds. P. Chen, and K. Reil (World Scientific, Singapore, 2004) pp.186-194.

383. Bulanov, S., Esirkepov, T., Koga, J., and Tajima, T., *Interaction of charged particles with ultra strong electromagnetic waves in the radiation dominated regime, ibid.* pp.204-217.

384. Chen, P., Tajima, T., and Takahashi, Y., *Cosmic plasma wakefield acceleration, ibid.* pp384-396.

385. Pegoraro, F., Bulanov. S.V., Esirkepov, T.Zh., Migliozzi, P., Tajima, T., and Terranova, F., *Exploring High-Energy Physics with Laser-Driven Proton Beams,* Laser Physics, **15**, 250 (2005).

386. Bulanov, S.V., and Tajima, T., *On the Quasi-monoenergetic electron beam generation in the laser wakefield acceleration*, Journal of the Particle Accelerator Society of Japan, **2,** 35(2005).

387. Kando, M., Masuda, S., Zhidkov, A., Yamazaki, A., Kotaki, H., Kondo, S., Homma, T., Kanazawa, S., Nakajima, K., Hayashi, Y., Mori, M., Kiriyama, H., Akahane, Y., Inoue, N., Ueda, H., Tsuji, K., Yamamoto, Y., Yamakawa, K., Koga, J., Hosokai, T., Ueseka, M., and Tajima, T., *Electron acceleration by a nonlinear wakefield generated by ultrashort (23-fs) high-peak-power laser pulses in Plasma,* Phys. Rev. **E 71**, 015403 (R), (2005). G28,W28

388. Tajima, T., *High Intensity Photon Science: Relativistic Engineering*, Frontier of Photon Science (光科学最前線) eds. Y.Kato et al., pp.224-225(2005).

389. Bulanov,S. V., Esirkepov, T., Migliozzi, P., Pegoraro, F., Tajima., Terranova, F., *Neutrino oscillation studies with laser-driven beam dump facilities,* Nucl. Instrum. Meth. Phys. Res. A **540**, 25-41 (2005). G49,W40

390. Pirozhkov, A.S., Bulanov, S.V., Esirkepov, T.Z., Sagisaka, A., Tajima, T. and Daido, H., *Intensisy scaling of attosecond pulse generation by the relativistic-irradiance laser pulses,* Joint Conference on Ultrafast Optics V and Application of High Field and Short Wavelength Sources XI **Tu3-3**, (2005).

391. Terranova, F., Bulanov, S., Esirkepov, T., Migliozzi, P., Pegoraro, F., Tajima, T., *Laser-driven proton sources: technological challenges and applications to neutrino physics*, Nuclear Phys. B-Proceedings Supplements **143**, 572 (2005).

392. Esirkepov, T., Bulanov, S.V., Yamagiwa, M., and Tajima, T., *Electron, Positron, and Photon Wakefield Acceleration: Trapping, Wake Overtaking and Ponderomotive Acceleration,* Phys. Rev. Lett. **96,** 014803 (2006). G73, W56

393. Mourou, G.A., Tajima, T., and Bulanov, S., *Optics in the Relativistic Regime*, Rev. Mod Phys.**78,** 309-371 (2006). G2256, W1464

394. Tajima, T., *光と医療の接点 (Crossroad of Light and Medicine)* , レーザー研究(Review of Laser Engineering) **34,** p. 273 (2006).

395. Tajima, T., *原子力研究における光科学の果たす役割 (The Role of Photon Science in Atomic Energy Research)* 原子力システムニュース (Atomic Energy News) **4,**5-9 (2006).

396. Tajima, T., *日本におけるプラズマ加速研究 (Plasma Acceleration in Japan)*日経サイエンス(Nikkei Science)**36**, 33 (2006).

397. Pegoraro, F., Bulanov, S.V., Esirkepov, T. Zh., Migliozzi, P., Tajima, T., and Terranova, F., *Efficient laser acceleration of photon beams for intense sources of low energy neutrinos*, AIP Conference Proceeding,s eds. D. Batani and M. Lontano, **827**, 130-139 (2006).

398. Daido, H., Nishiuchi, M., Fukumi, A., Li, Z., Sagisaka, A., Ogura, K., Orimo, S., Kado, M., Hayashi, Y., Mori, M., Nagashima, A., Pirozhkov, Bulanov, S., Esirkepov, T., Kimura, T., Tajima, T., Nemoto, K., Oishi, Y., Nayuki, T., Fujii, T., Noda, A., Iwashita, Y., Shirai, T., Nakamura, S., *Development of Laser-Driven Ion Source*, AIP Conference Proceeding(AIP, NY, 2006) **827**, 203-214.

399. Tajima, T., *怒濤の勢い、世界の光研究　日本も早急な戦略体制づくりを (Fast progress of photon research in the world: Need for Japanese initiative)*, エネルギーレビュー (Energy Review) **307**, 23-26 (2006).

400. Murakami, M., Hishikawa, Y., Daido, H., Tajima, T., *病巣局部を限定照射　レーザー駆動陽子線治療への期待 (Local irradiation of tumors: Laser-driven proton radiation therapy)*, エネルギーレビュー (Energy Review) **307**, 11-14 (2006).

401. Kando, M., Masuda, S., Zhidkov A., Yamazaki, A., Kotaki, H., Kondo, S., Homma, T., Kanazawa, S., Nakajima, K., Chen, L.-M., Ma, J., Hayashi, Y., Mori, M., Kiriyama, H., Akahane, Y., Inoue, N., Ueda, H., Nakai, Y., Tsuji, K., Yamamoto, Y., Koga, J., Hosokai, T., Kinoshita, K., Maekawa, A., Uesaka, M., Bulanov, S.V., Esirkepov, T. Zh., Yamagiwa, M., Kimura, T., Yamakawa, K., Tajima, T., *Generation and Characterization of Electrons from a Gas Target Irradiated by High-Peak-Power Lasers*, Laser Physics **16**, 576-580 (2006).

402. Noda, A., Nakamura, S., Iwashita, Y., Sakabe, S., Hashida, M., Shirai, T., Shimizu, S., Tongu, H., Ito, H., Souda, H., Yamazaki, A., Tanabe, M., Daido, H., Mori, M., Kado, M., Sagisaka, A., Ogura, K., Nishiuchi, M., Orimo, S., Hayashi, Y., Yogo, A., Bulanov, S., Esirkepov, T., Nagashima, A., Kimura, T., Tajima, T., Takeuchi, T., Matsukado, K., Fukumi, A., Li, Z, *Phase Rotation Scheme of Laser-Produced Ions for Reduction of the Energy Spread*, Laser Physics **16**, 647-653 (2006). G30,W21

403. Tajima, T., *強いレーザーは物質を極限まで制御できる (Intense lasers capable of control matter to the extreme)*, エネルギー（Energy）**39**, 46-48 (2006).

404. S. V. Bulanov, L. M. Chen, H. Daido, I. Daito, T. Zh. Esirkepov, Y. Fukuda, Y. Hayashi, T. Homma, M. Kando, T. Kimura, J. K. Koga, H. Kotaki, J. L. Ma, M. Mori, K. Ogura, A. S. Pirozhkov, A. Sagisaka, and T. Tajima, *Generation of extreme, ultra-high intensity electromagnetic pulses in nonlinear laser-plasma interaction,* in Proc. Int. Workshop Quark Nucl. Phys., eds. J. K. Ahn, M. Fujiwara, and T. Hayakawa (Pusan Univ. Press, Pusan, 2006). P.179.

405. Esirkepov, T., Yamagiwa, M., Tajima, T., *Laser Ion-Acceleration Scaling Laws Seen in Multiparametric Particle-in-Cell Simulations,* Phys. Rev. Lett. **96**, 105001 (2006). G267, W194

406. Terranova, F., Bulanov, S.V., Esirkepov, T., Migliozzi, P., Pegoraro, F., Tajima, T., *Mult-GeV laser driven proton acceleration in the high current regime*, Nuclear Phys. B-Proceedings Supplements **155**, 307-308 (2006).

407. Ohkubo, T., Bulanov, S.V., Zhidkov, A.G., Esirkepov, T., Koga, J., Uesaka, M., Tajima, T., *Wave-breaking injection of electrons to a laser wake field in plasma channel at the strong focusing regime*, Phys. of Plasmas **13** (10), 103101 (2006).W18

408. Noda, A., Nakamura, S., Iwashita, Y., Shirai, T., Tongu, H., Souda, H., Daido, H., Mori, M., Kado, M., Sagisaka, A., Ogura, K., Nishiuchi, M., Orimo, S., Hayashi, Y., Yogo, A., Pirozhkov, A., Bulanov, S., Esirkepov, T., Nagashima, A., Kimura, T., Tajima, T., Takeuchi, T., Fukumi, A., Li, Z., *High Quality Laser-Produced Proton Beam Generation by Phase Rotation*, Int . J. Mod. Phys. B **21**, 319-330 (2007).

409. Terranova, F., Bulanov, S., Esirkepov, T., Kiriyama, H., Tajima, T., Collier, J. L., Migliozzi, P., Pegoraro, F., *Novel acceleration techniques for the physics of massive neutrinos,* Int. J. Mod. Phys. B **21,** 351-360 (2007).

410. Xu, M.-H., Chen, L.-M., Li, Y.-T., Yuan, X.-H., Liu, Y.-Q., Nakajima, K., Tajima, T., Wang, Z.-H., Wei, Z.-Y., Zhao, W., Zhang, J., *Experimental Study on Ka X-ray emission from intense femtosecond laser-solid interactions,* Act. Phys. Sinica **56**, 353-358 (2007).

411. Chen, L.M., Kotaki, H., Nakajima, K., Koga, J., Bulanov, S.V., Tajima, T., Gu, Y.Q., Peng, H.S., Wang, X.X., Wen, T.S., Liu, H.J., Jiao, C.Y., Zhang, C.G., Hua, J.F., An, W.M., Tang, C.X., Lin,Y.Z., *Self-guiding of 100 TW femtosecond laser pulses in centimeter-scale underdense plasma,* Phys. Plasmas **14,** 040703 (2007). G38,W33

412. Chen, L.M., Kando, M., Ma, J., Kotaki, H., Fukuda, Y., Hayashi, Y., Daito, I., Homma, T., Ogura, K., Mori, M., Pirozhkov, A. S., Koga, J., Daido, H., Bulanov, S. V., Kimura, T., Tajima, T., Kato, Y., *Phase contrast x-ray imaging with intense Ar K-alpha radiation from femtosecond-laser-driven gas target,* Appl. Phy. Lett. **90**, 211501 (2007). G35,W31

413. Chen, L. M., Nakajima, K., Hong, w., Hua, J., Kameshima, T., Kotaki, H., Sugiyama, K., Wen, X., Wu, Y., Tang, C., Cu, Y., Peng, H., Kurokawa, S., Koga, J., Bulanov, S.V., Tajima, T., *Elongation of plasma channel for electron acceleration,* Chinese Opt. Lett. **5,** S133 (2007)

414. Kando, M., Fukuda, Y., Kotaki, H., Koga, J., Bulanov, S.V., Tajima, T., Chao, A., Pitthan, R., Schuler, K.-P., Zhidkov, A.G., Nemoto, K., *On the production of flat electron bunches for laser wake field acceleration*, JETP **105-5**, 916-926 (2007).

415. Saito, K., Saito, H., Kunieda, E., Narita, Y., Myojoyama, A., Fujisaki, T., Kawase, T., Kaneko, K., Ozaki, M., Deloar, H.M., Hirai, M., Oku, Y., Tajima, T., Yamagiwa, M., Koga, J., Esirkepov, T., Bulanov, S., Miyajima, S., Okazaki, Y., Date, H., Sutherland, K., Hishikawa, Y., Murakami, M., *放射線治療の高度化のための超並列シミュレーションシステムの開発*, 情報処理学会誌(Jpn. J. Inf. Proc.)**48-10**, 1081 (2007).

416. Nakamura, S., Ikegami, M., Iwashita, Y., Shirai, T., Tongu, H., Souda, H., Daido, H., Mori, M., Kado, M., Sagisaka, A., Ogura, K., Nishiuchi, M., Orimo, S., Hayashi, Y., Yogo, A., Pirozhkov, A.S., Bulanov, S.V., Esirkepov, T., Nagashima, A., Kimura, T., Tajima, T., Takeuch, T., Fukumi, A., Li, Z., Noda, A., *High-Quality Laser-Produced Proton Beam Realized by the Application of a Synchronous RF Electric Field*, Jpn. J. Appl. Phys. **46-29**, L717-L720 (2007). G29,W15

417. Kando, M., Fukuda, Y., Pirozhkov, A.S., Ma, J., Daito, I., Chen, L.M., Esirkepov, T.Z., Ogura, K., Homma, T., Hayashi, Y., Kotaki, H., Sagisaka, A., Mori, M., Koga, J.K., Daido, H., Bulanov, S.V., Kimura, T., Kato, Y., Tajima, T., *Demonstration of laser-frequency upshift by electron-density modulations in a plasma wakefield*, Phys.Rev.Lett.**99**, 135001 (2007). G129, W103

418. Yamagiwa, M., Bulanov, S., Esirkepov, T., Koga, J., Otobe, T., and Tajima, T., *Computational physics of photon science,* Joint International Topical Meeting on Mathematics & Computation and Supercomputing in Nuclear Applications (M&C + SNA 2007, Monterey, CA April 15-19, 2007) CD-ROM, (American Nuclear Society, LaGrange Park, IL, 2007).

419. Pirozhkov, A.S., Ma, J., Kando, M., Esirkepov, T., Fukuda, Y., Chen, L.M., Daito, I., Ogura, K., Homma, T., Hayashi, Y., Kotaki, H., Sagisaka, A., Mori, M., Koga, J.K., Kawachi, T., Daido, H., Bulanov, S.V., Kimura, T., Kato, Y., Tajima, T., *Frequency multiplication of light back-reflected from a relativistic wake wave*, Phys. Plasmas **14**, 123106 (2007). G88, W68

420. L. M. Chen, M. Kando, H. Kotaki, K. Nakajima, S. V. Bulanov, T. Tajima, M. H. Xu, Y. T. Li, Q. L. Dong, J. Zhang, *Spatial characteristics and pulse shape dependence of K-alpha x- ray emission from relativistic fs laser plasmas*, Ultrafast Optics V (Springer, Berlin, 2007) **132**, 193.

421. Yogo, A., Daido, H., Bulanov, S.V., Nemoto, K., Oishi, Y., Nayuki, T., Fuji, T., Ogura, K., Orimo, S., Sagisaka, A., Ma, J.L., Esirkepov, T.Zh., Mori, M., Nishiuchi, M., Pirozhkov, A.S., Nakamura, S., Noda, A., Nagatomo, H., Kimura, T., Tajima, T., *Laser ion acceleration via control of the near-critical density target*, Phys. Rev. E **77**, 016401(2008). G101, W77

422. Tajima, T., *プラズマを用いたレーザー加速の新展開：cm でGeV*, パリティ(Parity) **23**, No.1,9-10 (2008).

423. Chen, L. M., Kando, M., Koga, J., Bulanov, S. V., Kato, Y., Tajima, T., Xu, M. H., Yuan, X. H., Li, Y. T., Dong, Q. L., Sheng, Z. M., Zhang, J., *Study of x-ray emission enhancement via high contrast femtosecond laser interacting with solid foil,* Phys. Rev. Lett. **100**, 045004 (2008). G101, W65

424. Fukuda, Y, Ya, A., Pikuz, T., Kando, M., Kotaki, H., Daito, I., Chen, L.M., Homma, T., Kawase, K., Kameshima, T., Kawachi, T., Daido, H., Kimura, T., Tajima, T., Kato, Y., and Bulanov, S.V., *Soft X-ray source for nanostructure imaging using femtosecond-laser-irradiated clusters*, Appl. Phy. Lett.**92,** 121110 (2008). G65,W52

425. Tajima, T., *Notes on Laser Acceleration*, in "First International Symposium on Laser-Driven Relativistic Plasmas Applied to Science, Industry and Medicine", Eds. S. V. Bulanov and H. Daido, AIP Conference Proceedings (AIP, NY, 2008) p.52.

426. Kameshima, T., Wei Hong, Sugiyama, K., Xianlun Wen, Yuchi Wu, Chuanming Tang, Qihua Zhu, Yuqiu Gu, Baohan Zhang, Hansheng Peng, Kurokawa, S., Liming Chen, Tajima, T., Kumita, T., and Nakajima K., *0.56 GeV Laser Electron Acceleration in Ablative Capillary Discharge Plasma Channel,* Appl. Phys. Express **1**, 066001(2008). G47,W40

427. Murakami, M., Hishikawa, Y., Miyajima, S., Okazaki, Y., K. L. Sutherland, Abe, M., S. V. Bulanov, Daido, H., T. Zh. Esirkepov, J. Koga, Yamagiwa, M., and Tajima, T., *Radiotherapy using a laser proton accelerator,* in "First International Symposium on Laser-Driven Relativistic Plasmas Applied to Science, Industry and Medicine", Eds. S. V. Bulanov and H. Daido, AIP Conference Proceedings (AIP,NY,2008) p.275. G29,W23

428. L. M. Chen, Nakajima , K., W. Hong, Kameshima, T., J. F. Hua, Kotaki, H., Sugiyama, K., X.L. Wen, Y. C. Wu, C. M. Tang, Y. Q. Gu, H. S. Peng, Kurokawa, S. J. Koga, S. V. Bulanov, and Tajima. T., *Electron acceleration based on an elongated plasma channel,* IEEE Transactions on Plasma Science **36**, 1734 (2008).

429. Kawase, K., Kando, M., Hayakawa, T., Daito, I., Kondo, S., Homma, T., Kameshima, T., Kotaki, H., Liming Chen, Fukuda, Y., Anatoly Faenov, Shizuma, T., Fujiwara, M., Bulanov, S., Kimura, T., and Tajima, T., S*ub-MeV tunably polarized X-ray production with laser Thomson backscattering,* Rev. Sci. Instr.**79**, 053302(2008). G29,W18

430. Kiriyama, H., Mori, M., Kando, M., Nakai, Y., Shimomura, T., Tanoue, M., Daito, I., Akutsu, A., Kondo, S., Kanazawa, S., Okada, H., Motomura, T., Daido, H., Kimura, T., and Tajima, T., *High-contrast, high-intense laser pulse generation using nonlinear pre-amplifier in Ti:sapphire laser system,*Opt.Lett. **33**,645(2008). G87, W63

431. Kando, M., Kiriyama, H., J. K. Koga, S. Bulanov, A. W. Chao, T. Esirkepov, Hajima, R., and Tajima, T., *Opportunities for TeV Laser Acceleration,* in "First International Symposium on Laser-Driven Relativistic Plasmas Applied to Science, Industry and Medicine", Eds. S. V. Bulanov and Daido, H., AIP Conference Proceedings (AIP,NY,2008) p.197.

432. Pirozhkov, A.S., Eshirkepov, T.Z., Kando, M., Fukuda, Y., Ma, J., Chen, L.M., Daito, I., Ogura, K., Homma, T., Hayashi, Y., Kotaki, H., Sagisaka, A., Mori, M., Koga, J.K., Kawachi,

T., Daido, H., Bulanov, S.V., Kimura, T., Kato, Y., and Tajima, T., *Relativistic Tennis Using Flying Mirrors, ibid.*p.52.

433. Ikegami, M., Nakamura, S., Iwata, Y., Shirai, T., Souda, H., Tajima,Y., Tanabe, M., Tongu, H., Itoh, H., Shintaku, H., Yamazaki, A., Daido, H., Yogo, A., Orimo, S., Mori, M., Nishiuchi, M., Ogura, K., Pirozhkov, A., Ma, J., Kiriyama, H., Kanazawa, S., Sagisaka, A., Kondo, S., Tamamoto, Y., Shimomura, T., Tanoue, M., Nakai, Y., Akutsu, A., Bulanov, S., Kimura, T., Oishi, Y., Nemoto, K., Tajima, T., and Noda, A., *MeV quasi-mono-energetic proton beam created by a combination of a laser-plasma ion accelerator and synchrotron rf cavity, ibid.* p.96.

434. Kiriyama, H., Mori, M., Daito, I., Nakai, Y., Shimomura, T., Okada, H., Motomura, T., Kondo, S., Kanazawa, S., Daido, H., Kimura, T., and Tajima, T., *Nonlinear pre-amplifier with Ti:sapphire chirped-pulse amplification laser system, ibid.*p.7.

435. S. V. Bulanov, G. Mourou, and Tajima, T., *Relativistic electron beam slicing by wakefield in plasmas*, Phys. Lett.A **372**, 4813(2008).

436. Pirozhkov, A.S., Eshirkepov, T.Z., Kando, M., Fukuda, Y., Ma, J., Chen, L.M., Daito, I., Ogura, K., Homma, T., Hayashi, Y., Kotaki, H., Sagisaka, A., Mori, M., Koga, J.K., Kawachi, T., Daido, H., Bulanov, S.V., Kimura, T., Kato, Y., Tajima, T., *Demonstration of light reflection from the relativistic mirror*, J.Phys. Conf. 112, 042050 (2008).

437. Nishiuchi, M., Daido, H., Yogo, A., Sagisaka, A., Ogura, K., Orimo, S., Mori, M., Ma, J., Pirozhkov, A., Kiriyama, H., Kanazawa, S., Kondo, S., Yamamoto, Y., Shimoura, T., Tanoue, M., Nakai, Y., Akutsu, A., Nagashima, A., Bulanov, S.V., Esirkepov, T., Kimura, T., Tajima, T., Nemoto, K., Onishi, Y., Nayuki, T., Fujii, T., Noda, A., Iwashita, W., Shirai, T., Nakamura, S., Choi, I.W., Yu, T.J., Sung, J.H., Kim, H.T., Jeong, T.M., Hong, K.-H., Noh, Y.-C., Ko, D.-K., and Lee, J., *Laser-driven proton sources and their applications: Femtosecond intense laser plasma driven simultaneous proton and X-ray imaging, ibid.* 042036 (2008).

438. Kawanishi, S., Daido, H., and Tajima, T., *Photo-Medical Valley: "Photo Medical Research Center"*, Rev. Laser Engin. (レーザー研究) **36**,440(2008).

439. Tajima, T., *Laser Wakefields: Bringing accelerators down to size*, Nature Photonics **2**, 526(2008).

440. T Ebisuzaki, Y Uehara, H Ohmori, K Kawai, Y Kawasaki, M Sato, Y Takizawa, ME Bertaina, F Kajino, T Sawabe, K Inoue, A Sasaki, M Sakata, Y Yamamoto, M Nagano, N Inoue, T Shibata, N Sakaki, Y Uchihori, Y Takahashi, H Shimizu, Y Arai, Y Kurihara, H Fujimoto, S Yoshida, Y Mizumoto, S Inoue, K Asano, T Sugiyama, J Watanabe, Hirokazu Ikeda, Makoto Suzuki, Takeshi Imamura, Hajime Yano, T Murakami, D Yonetoku, Y Itow, M Taguchi, M Nagata, S Nagataki, S Abe, T Tajima, JH Adams, S Mitchell, MJ Christl, J Watts, A English, K Pitalo, J Hadaway, J Geary, P Readon, H Crawford, C Pennypacker, K Arisaka, D Cline, P Gorodetsky, P Salin, T Patzark, A Maurissen, M Valentin, *The JEM-EUSO project: Observing extremely high energy cosmic rays and neutrinos from the International Space Station*, Nucl. Phys. B- Proc. Suppl. **175**, 237 (2008). G45,W33

441. Tajima, T., *Prospect for extreme field science,* Eur. Phys. J. **D**, **55**, 519 (2009). G33,W21

442. Habs, D., Tajima, T., Schreiber, J., Barty, C., Fujiwawa, M., and Thirolf, P., *Visions in nuclear physics with photo-nuclear reactions by laser-driven γ beams*, Eur. Phys. J. **D**, e2009-00101-2(2009).

443. Thirolf, P., Habs, D., Henig, A., Jung, D., Kiefer, D., Lang, C., Schreiber, J., Maia, C., Schaller, G., Schuetzhold, R., and Tajima, T., *Signatures of the Unruh effect via high-power, short-pulse lasers*, Eur. Phys. J. **D**,e2009-00149-x (2009). G28,W23

444. T.A. Pikuz, A. Ya. Faenov, I. Yu. Skobelev, S. V. Gasilov, A S. Boldarev, V. A. Gasilov, Fukuda, Y., Kando, M., Kotaki, H., Daito, I., Homma, T., Kawase, K., Kameshima, T., Kawachi, T., P. Bolton, Daido, H., Kimura,T., Tajima, T., Kato, Y., S. V. Bulanov, *Femtosecond-Laser-Driven Cluster-Based Debris-Free Soft X-ray Source for Nanostructure Imaging*, J. Plasma Fusion Research **8**, 1300 (2009).

445. T A Pikuz, A Ya Faenov, I Yu Skobelev, S V Gasilov, A S Boldarev, V A Gasilov, Fukuda, Y., Kando, M., Kotaki, H., Daito, I., Homma, T., Kawase, K., Kameshima, T., Kawachi, T., P. Bolton, Daido, H., Kimura, T., Tajima, T., Kato, Y., S. V. Bulanov, *Enhancement of soft X-ray emission from fs laser plasma by using mixture of molecule and atomic gases as cluster jet targets and its application for nanostructure imaging* , J. Physics : Conference Series. **163,** 012106 (2009).

446. A.Ya. Faenov, T. A. Pikuz, Fukuda, Y., Kando, M., Kotaki, H., Homma, T., Kawase, K., Kameshima, T., A. Pirozhkov, Yogo, A., Tampo, M., Mori, m., Sakaki, H., Hayashi, Y., Nakamura, T., S.A. Pikuz Jr., V. Kartashev, I.Yu. Skobelev, S.V. Gasilov, A. Giulietti, C.A. Cecchetti, A.S. Boldarev, V.A. Gasilov, A. Magunov, S. Kar, M. Borghesi, P. Bolton, Daido, H., Tajima, T., Kato, Y., S.V. Bulanov. *Femtosecond-Laser-Driven Cluster-Based Plasma Source for High-Resolution Ionography*, in "AIP Conference Proceedings of The Second International Symposium on Laser-Driven Relativistic Plasmas Applied to Science, Industry and Medicine" (AIP, NY,2009)**1153**, p.343.

447. T. A. Pikuz, A.Ya. Faenov, Fukuda, Y., Kando, M., Kotaki, H., Homma, T., Kawase, K., Kameshima, T., Daito, I., I.Yu. Skobelev, S.V. Gasilov, A.S. Boldarev, V.A. Gasilov, Kawachi, T., P. Bolton, Daido, H., Tajima, T., Kato, Y., S.V. Bulanov, *Contact and Phase-Contrast Imaging of Nanostructures by Femtosecond-Laser-Driven- Cluster-Based Debris-Free Soft X-Ray Source*, in "AIP Conference Proceedings of The Second International Symposium on Laser-Driven Relativistic Plasmas Applied to Science, Industry and Medicine"(AIP, NY, 2009) **1153**, p.416.

448. Bulanov, S., Esirkepov, T., Habs, D., Pegoraro, F., and Tajima, T., *Relativistic laser-matter interaction and relativistic laboratory astrophysics*, Eur. Phys. J. **D 55**, 483 (2009). G89, W70

449. Pirozhkov, A., Kando, M., Esirkepov, T., Fukuda, Y., Chen, L.M., Daito, I., Ogura, K., Homma, T., Hayashi, Y., Kotaki, H., Sagisaka, A., Mori, M., Koga, J., Kawachi, T., Kiriyama, H., Okada, H., Kawase, K., Kameshima, H., Nishimori, N., Ragozin, E., Faenov, A., Pukuz,

T., Kimura, T., Tajima, T., Daido, H., Kato, Y., and Bulanov, S., *Demonstration of flying mirror with improved efficiency*, in "AIP Conference Proceedings of The Second International Symposium on Laser-Driven Relativistic Plasmas Applied to Science, Industry and Medicine"(AIP, NY, 2009) **1153**, p.274.

450. Kando, M., Pirozhkov, A., Fukuda,Y., Esirkepov,T., Daito,I., Kawase, K., Ma, J., Chen, L., Hayashi, Y., Mori, M., Ogura, K., Kotaki, H., Sagisaka, A., Ragozin, E., Faenov, A., Pikuz, T., Kiriyama, H., Okada, H., Kameshima, T., Koga, J., Kawachi, T., Daido, H., Kimura, T., Kato, Y., Tajima, T., and Bulanov, S., *XUV and IR electromagnetic radiation from nonlinear laser-plasma interaction*, Proc. SPIE,**7359**, 73590K (2009).

451. Okada, H., Kiriyama, H., Nakai,Y., Tagami, M., Shimomura,T., Kondo,S., Kanazawa,S., Mori,M., Daido, H., Kimura, T., Tajima, T., *光パラメトリックチャープパルス増幅システムにおける広スペクトル帯域光発生* , J. Plasma Fusion Res., **85**, 384 (2009).

452. A.Ya. Faenov, T. A. Pikuz, Fukuda, Y., Kando, M., Kotaki, H., Homma, T., Kawase, K., Kameshima, K., A. Pirozhkov, Yogo, A., Tampo, M., Mori, M., Sakaki, H., Hayashi, I., Nakamura, T., S.A. Pikuz Jr., V. Kartashev, I.Yu. Skobelev, S.V. Gasilov, A. Giulietti, C.A. Cecchetti, A.S. Boldarev, V.A. Gasilov, A. Magunov, S. Kar, M. Borghesi, P. Bolton, Daido, H., Tajima, T., Kato, Y., S.V. Bulanov., *Ionography of Nanostructures with the Use of a Laser Plasma of Cluster Targets*, JETP Lett. **89**, 485 (2009).

453. Kiriyama, H., Mori, M., Nakai, Y., Shimomura, T., Tanoue, M., Akutsu, A., Okada, H., Motomura, T., Kondo, S., Kanazawa, S., Sagisaka, A., Ma, J. L., Daito, I., Kotaki, H., Daido, h., Bulanov, S., Kimura, T., and Tajima, T., *Generation of high-contrast and high-intensity laser pulses using an OPCPA preamplifier in a double CPA, Ti:sapphire laser system*, Opt. Comm. **282**, 625 (2009). G67,W49

454. Kiriyama, H., Mori, M., Nakai, Y., Shimomura, T., Tanoue, M., Akutsu, A., Okada, H., Motomura, T., Kondo, S., Kanazawa, S., Sagisaka, A., Ma, J. L., Daito, I., Kotaki, H., Daido, h., Bulanov, S., Kimura, T., and Tajima, T.,*Temporal contrast and spatial beam quality improvement techniques in a high intensity Ti:sapphire laser system* , Rev. Laser Eng. **37,**425 (2009).(in Japanese)

455. A. Henig, S. Steinke, M. Schn¨urer, T. Sokollik, R. H¨orlein, D. Kiefer, D. Jung, J. Schreiber, B. M. Hegelich, X.Q.Yan, J. Meyer-ter-Vehn, T. Tajima, P.V. Nickles, W. Sandner, and D. Habs, *Radiation pressure acceleration of ion beams driven by circularly polarized laser pulses*, Phys. Rev. Lett. **103**, 245003 (2009). G604, W407

456. A.Ya. Faenov, T.A. Pikuz, Fukuda, Y., Kando, M., Kotaki, H., Homma, T., Kawase, K., Kameshima, T., A. Pirozhkov, Yogo, A., Tampo, M., Mori, M., Sakaki, H., Hayashi, Y., Nakamura, T., S.A. Pikuz Jr., I.Yu. Skobelev, S.V. Gasilov, A. Giulietti, C.A. Cecchetti, A.S. Boldarev, V.A. Gasilov, A. Magunov, S. Kar, M. Borghesi, P. Bolton, Daido, H., Tajima, T., Kato, Y., S.V. Bulanov, *Submicron ionography of nanostructures using a femtosecond-laser-driven-cluster-based source.* Appl. Phys. Let. **95,** 101107 (2009). G29,W20

457. Ikegami, M., Nakamura, S., Iwashita, Y., Shirai, T., Souda, H., Tajima, Y., Tanabe, M., Tongu, H., Itoh, H., Shintaku, H., Yamazaki, A., Daido, H., Yogo, A., Orimo, S., Mori, M., Nishiuchi, M., Ogura, K., Sagisaka, A., Pirozhkov., A., Kiriyama, H., Kanazawa, S., Kondo, S., Yamamoto, Y., Shimomura, T., Tanoue, M., Nakai, Y., Akutsu, A., S.V. Bulanov., Kimura, T., Oishi, Y., Nemoto, K., Tajima, T., and Noda, A., *Radial focusing and energy compression of a laser-produced proton beam by a synchronous rf field*, Phys. Rev. STAB **12**, 063501 (2009).

458. Fukuda, Y., Faenov, A., Tampo, M., Pikuz., T., Nakamura, T., Kando, M., Hayashi, Y., Yogo, A., Sakaki, H., Kameshima, T., Pirozhkov, A., Ogura, K., Mori, M., Esirkepov, T., Koga., J., Boldarev, A., Gasilov, V., Magunov, A., Yamauchi, T., Kodama, R., Bolton, P., Kato, Y., Tajima, T., Daido, H., and Bulanov, S., *Energy increase in multi-MeV ion acceleration in the interaction of a short pulse laser with a cluster-gas target*, Phys. Rev. Lett.**103**, 165002 (2009). G220, W147

459. Tajima, T., Habs, D. and Yan, X. Q., *Laser acceleration of ions for radiation therapy*, Rev. Accel. Sci. Tech. **2**, 201 (2009). G107, W71

460. Habs, D., Tajima, T., Schreiber, J., Barty, C., Fujiwara, M., and Thirolf1,P., *Vision of nuclear physics with photo-nuclear reactions by laser-driven γ beams*, Eur. Phys. J. D **55**, 279 (2009). G37,W28

461. Thirolf, P., Habs, D., Henig, A., Jung, D., Kiefer, D., Lang, C., Schreiber, J., Maia, C., Schaller, G., Schuetzhold, R., and Tajima, T., *Signatures of the Unruh effect via high-power, short-pulse lasers*, Eur. Phys. J. D **55**, 379 (2009).

462. Kando, M., Pirozhkov, A., Fukuda, Y., Esirkepov, T., Daito, I., Kawase, K., Ma, J., Chen,L., Hayashi, Y., Mori, M., Ogura, K., Kotaki, H., Sagisaka, A., Ragozin, E., Faenov, A., Pikuz, T., Kiriyama, H., Okada H., Kameshima, T., Koga, J., Belyaev, K., Kamenets, F., Sugiyama1, A., Kawachi1, T., Daido, H., Kimura, T., Kato, Y., Tajima, T., and Bulanov, S. *Experimental studies of the high and low frequency electromagnetic radiation produced from nonlinear laser-plasma interactions*, Eur. Phys. J. D **55**, 465 (2009). W15

463. Kando, M., Pirozhkov, A., Kawase, K., Esirkepov, T., Fukuda, Y., Kiriyama, H., Okada, H., Daito, I., Kameshima, T., Hayashi, Y., Kotaki, H., Mori, M., Koga, J., Daido, H., Faenov, A., Pikuz, T., Ma, J., Chen, L., Ragozin, E., Kawachi, T., Kato, T., Tajima, T., and Bulanov, S., *Enhancement of photon number reflected by the relativistic flying mirror*, Phys. Rev. Lett. **103**, 235003 (2009). G83,W57

464. Gasilov, S., Faenov, A., Pikuz, T., Skobelev, I., Boldarev, A., Gasilov, V., Magunov, A., Fukuda, Y., Kando, M., Kotaki, H., Kawase, K., Kawachi, T., Daido, H., Tajima, T., Kato, Y., and Bulanov, S., *Conventional and propagation-based phase contrast imaging of nanostructures using femtosecond laser driven cluster plasma source and LiF crystal soft X-ray detectors*, Contrib. Plasma Phys. **49**, 488 (2009).

465. A.Ya. Faenov, T. A. Pikuz, S. A. Pikuz Jr., Fukuda, Y., Kando, M., Kotaki, H., Homma, T., Kawase, K., Kameshima, T., A. Pirozhkov, Yogo, A., Tampo, M., V. Kartashev, I. Yu.Skobelev, S. V. Gasilov, A. S. Boldarev, V. A. Gasilov, A. Magunov, A. Giulietti, C. A.

Cecchetti, Mori, M., Sakaki, H., Hayashi, Y., P. Bolton, Nakamura, T., Daido, H., Tajima, T., Kato, Y., and S. V. Bulanov, *Ionography of submicron foils and nanostructures using ion flow generated in fs-laser cluster plasma,* Contrib. Plasma Phys. **49**, 507 (2009).

466. Y. Takahashi and the JEM-EUSO collaboration (…..T. Tajima,…….), *The JEM-EUSO mission,* New J. Phys. **11**, 065009 (2009).

467. Yan, X.Q., Tajima, T., Hegelich, B.M., Yin, L., and Habs, D., *Theory of laser ion acceleration from a foil target of nanometer thickness,* Applied Phys. B **98**, 711 (2010). G46,W20

468. Sutherland, K., Miyajima, S., Date, H., Shirato, h., Ishikawa, M., Murakami, M., Yamagiwa, M., Bolton, P., and Tajima, T., *A parameter study of pencil beam proton dose distribution for the treatment of ocular melanoma utilizing spot scanning,* Radio.Phys.Technol.**3**, 16 (2010).

469. Tajima, T., Barish, B., Barty, C., Bulanov, S., Chen, P., Feldhaus, J., Hajdu, J., Keitel, C., Kieffer, J., Ko, D., Leemans, W., Normand, D., Palumbo, L., Rzazewski, K., Sergeev, A., Sheng, Z., Takasaki, F., and Teshima, M., *Science of Extreme Light Infrastructure,* in AIP Proceedings of LEI Conference **1228** "Light at Extreme Intensities---Opportunities and Technological Issues of the Extreme Light Infrastructure", ed. D. Dumitras (AIP, NY, 2010) p.11.

470. Thirolf, P., Habs, D., Homma, K., Hoerlein, R., Karsch, S., Krausz, F., Maia, C., Osterhoff, J., Popp, A., Schmid, K., Schreiber, J., Schuetzhold, R., Tajima, T., Veisz, L., Wulz, J., and Yamazaki, T., *On the detection of footprints from strong electron acceleration in high-intensity laser fields, including the Unruh effect*, *ibid*. p.54.

471. A.Ya. Faenov, Fukuda, Y., T.A. Pikuz, Kando, M., Kotaki, H., Homma, T., Kawase, K., Kameshima, T., Daito, I., Hayashi, Y., Sakaki, H., P. Bolton, A. Pirozhkov, Yogo, A., Tampo, M., Nakamura, T., Mori, M., Ogura, K., I.Yu. Skobelev, S.V. Gasilov, A.S. Boldarev, V.A. Gasilov, A.I. Magunov, Kawachi, T., Daido, H., Tajima, T., Kato, Y., S.V. Bulanov, *Investigations of short laser pulse interaction with large clusters and its applications to imaging process,* J. Korean Phys. Soc. **56**, 279(2010).

472. Tajima, T., *Laser acceleration and its future,* Proc. Jpn. Acad. Ser. B **86**, 147(2010). G23,W18

473. Kiriyama, H., Mori, M., Nakai, Y., Shimomura, T., Sasao, H., Tanaka, M., Ochi, Y., Tanoue, M., Okada, H., Kondo, S., Kanazawa, S., Sagisaka, A., Daito, I., Wakai, D., Sasao,F., Suzuki, M., Kotakai, H., Kondo, K., Sugiyama, A., Bulanov, S., Bolton, P.,Daido, H., Kawanishi, S., Collier, J., Hernandez-Gomez,C., Hooker, C., Erte, K., Kimura, T., and Tajima, T., *High-spatiotemporal-quality petawatt-class laser system*, Applied Optics **49**, 2105(2010). G43,W33

474. S. Steinke, A. Henig, M. Schn¨urer, T. Sokollik, P.V. Nickles, D. Jung, D. Kiefer, T. Tajima, X.Q. Yan, J. Meyer-ter-Vehn, W. Sandner, and D. Habs, *Efficient ion acceleration by collective laser-driven electron dynamics with ultra-thin foil targets,* Laser Part. Beams **28**, 215 (2010). G74, W57

475. Kiriyama, H., Mori, M., Nakai, Y., Shimomura, T., Sasao, H., Tanoue, M., Kanazawa, S., Wakai, D., Sasao, F., Okada, H., Daito, I., Suzuki, M., Kondo, S., Kondo, K., Sugiyama, A., Bolton, P.R., Yokoyama, A., Daido, H., Kawanishi, S., Kimura, T., and Tajima, T., *High temporal and spatial quality petawatt-class Ti:sapphire chirped-pulse amplification laser system*, Opt. Lett. **35**, 1497 (2010). G101, W71

476. L. M. Chen, F. Liu, W. M. Wang, M., J.Y. Mao, L. Zhang, J. L. Ma, Y. T. Li, S.V. Bulanov, Tajima, T., Kato, Y., Z. M. Sheng, Z.Y. Wei, and J. Zhang , *Intense High-Contrast Femtosecond K-Shell X-Ray Source from Laser-Driven Ar Clusters*, Phys. Rev. Lett.**104**, 215004 (2010). G67,W50

477. Kiriyama, H., Mori, M., Nakai, Y., Shimomura, T., Sasao, H., Tanaka, M., Ochi, Y., Tanoue, M., Kondo, S., Kanazawa, S., Daito, I., Okada, H., Wakai, D., Sasao, F., Suzuki, M., Kosuge, A., Kondo, K., Sugiyama, A., S.V. Bulanov, P.R. Bolton, Daido, H., Kawanishi, S., Kimura, T., and Tajima, T., *高コントラスト・高ビーム品質・高強度レーザーの開発 (Development of a high-contrast, high beam-quality, high-intensity laser)*, Rev. Laser Engin. **38**, 669 (2010).

478. Faenov, A., Pikuz, T., Fukuda, Y., Kando, M., Kotaki, H., Homma, T., Kawase, K., Skobelev, I., Gasilov, S., Kawachi, T., Daido, H., Tajima, T., Kato, Y., and Bulanov, S., *Metrology of wide field of view nano-thickness foils' homogeneity by conventional and phase contrast soft X-ray imaging*, Jpn. J. Appl. Phys. **49**, 06GK03 (2010).

479. Wu, H. C., Tajima, T., Habs, D., Chao, A., and Meyer-ter-Vehn, J., *Collective deceleration: toward a compact beam dump*, Phys. Rev. STAB **13**, 101303 (2010).

480. H. Y. Wang, X. Q. Yan, Y. R. Lu, F. L. Zheng, Z. Y. Guo, W. J. Ma, X. T. He, T. Tajima, D. Habs, and J. E. Chen, *Self-focusing proton acceleration from a nanometer-scale bulged Foil*, Phys. Plasmas **17**, 113111 (2010).

481. Tajima, T., Habs, D., and Mourou, G., *Highest intensities, shortest pulses*, Optik & Photon. 2010 Dec., 24 (2010).

482. B. J. Albright, L. Yin, B. M. Hegelich, K. J. Bowers, C. Huang, A. Henig, J. C. Fernandez, K. A. Flippo, S. A. Gaillard, T. J. T. Kwan, X. Q. Yan, T. Tajima, and D. Habs, *Ultraintense laser interaction with nanoscale targets:a simple model for layer expansion and ion acceleration*, J. Physics, Conf. Ser. **244,** 042022 (2010).

483. L. M. Chen, W. M. Wang, M. Kando, L. T. Hudson, F. Liu, X. X. Lin, J. L. Ma, Y. T. Li, S. V. Bulanov, T. Tajima, Y. Kato, Z. M. Sheng, J. Zhang, *High contrast femtosecond laser-driven intense hard x-ray source for imaging application*, Nucl. Instru. Meth. A **619**, 128 (2010).

484. Mourou, G. M., and Tajima, T., *More intense, shorter pulses*, Science **331**, 41(2011). G127, W94

485. Tajima, T., Kando, M., and Teshima, M., *Feeling the texture of vacuum---laser Acceleration toward PeV*, Prog. Theor. Phys. **125,** 617 (2011). (arXiv:1005.3442v1 [physics.plasm-ph]).

486. S. Steinke, M. Schn¨urer, T. Sokollik, A. Andreev, P. Nickles, A. Henig, R. H¨orlein, D. Kiefer, D. Jung, J. Schreiber, T. Tajima, D. Habs, and W. Sandner, *Optimization of Laser-Generated Ion Beams,* Contrib. Plas. Phys. **51,** 441 (2011).

487. Tajima, T., and Mourou, G., *A Recent Development in High Field Science*, in Proc. Physics in Intense Fields, eds. K. Itakura, A. Iso, and T. Takahashi (KEK, Tsukuba, 2011) p.1.

488. Homma, K., Habs, D., and Tajima, T., *Probing vacuum birefringence by phase-contrast Fourier imaging under fields of high-intensity lasers*, Appl. Phys. B **104**, 69-782 (2011). (arXiv:1006.4533 [quant-ph]) (DOI:10.1007/s00340-011-4568-2).

489. Mourou, G., and Tajima, T., *The Extreme Light Infrastructure: Optics Next Horizons,* Opt. Photon. News **22,** 47 (2011). G32

490. Y. Fukuda, A.YA. Faenov, M. Tampo, T.A. Pikuz, T. Nakamura, M. Kando, Y. Hayashi, A. Yogo, H. Sakaki, T. Kameshima, K. Kawase, A.S. Pirozhkov, K. Ogura,M. Mori, T. Zh. Esirkepov, J. Koga, A.S. Boldarev, V.A. Gasilov, A.I. Magunov, T. Yamauchi, R. Kodama, P.R. Bolton, K. Kondo, S. Kawanishi, Y. Kato, T. Tajima, H. Daido, and S.V. Bulanov, *Ion Acceleration in Subcritical Density Plasma via Interaction of Intense Laser Pulse with Cluster-Gas Target*, in Progress in Ultrafast Intense Laser Science VII , eds. K. Yamanouchi (Springer, Berlin, 2011) p.225.

491. Habs, D., Tajima, T., and Koester, U., *Laser-Driven Radiation Therapy,* in Current Cancer Treatment: Novel Beyond Conventional Approaches, Chap. 10, Oner Ozdemir (Ed.), ISBN 978-953-307-397-2 (Intech, Rijeka, 2011) p.199. (DOI: 10.5772/24190). http://www.intechopen.com/books/show/title/current-cancer-treatment-novel-beyond-conventional-approaches

492. R. Hoerlein, S. Steinke, A. Henig, S. G. Rykovanov, M. Schnuerer, T. Sokollik, D. Kiefer, D. Jung, X. Q. Yan, T. Tajima, J. Schreiber, M. Hegelich, P. V. Nickles, M. Zepf, G. D. Tsakiris, W. Sandner, and D. Habs, *Dynamics of Nanometer-Scale Foil Targets Irradiated with Relativistically Intense Laser Pulses*, Laser Part. Beams **51**, 444 (2011).

493. B. M. Hegelich, D. Jung, B. J. Albright, J. C. Fernández, D. C. Gautier, C. Huang, T.J. Kwang, , S. Letzring, S. Palanlyappan, R.C. Shah, H.-C. Wu, L.Yin, A. Henig, R. Hörlein, D. Kiefer, J. Schreiber, T. Tajima, X. Yan, D. Habs, B. Dromey, and J.J. Honrubia, *Experimental demonstration of particle energy, conversion efficiency and spectral shape required for ion-based fast ignition,* Nucl. Fusion **51,** 083011 (2011). G56,W37

494. D. Jung, L. Yin, B. J. Albright, D. C. Gautier, R. H¨orlein, D. Kiefer, A. Henig, R. Johnson, S. Letzring, S. Palaniyappan, R. Shah, T. Shimada, X. Q. Yan, K. J. Bowers, T. Tajima, J. C. Fernandez, D. Habs, and B. M. Hegelich, *Monoenergetic ion beam generation by driving ion solitary waves with circularly polarized laser light*, Phys. Rev. Let. **103,** 115002 (2011). G74,W52

495. M. Schnürer, A. Andreev, S. Steinke, T. Sokollik, T. Paasch-Colberg, P. Nickles, A. Henig, D. Jung, D. Kiefer, R. Hörlein, J. Schreiber, T. Tajima, D. Habs, and W. Sandner, *Comprison femtosecond laser-driven proton acceleration using nanometer and micrometer thick target*

foilslectron density distribution for laser driven ion acceleration, to be published in Laser Part. Beams (2011).

496. K. Nakajima, A. Deng, X. M. Zhang, B.F. Shen, J. S. Liu, R. X. Li, Z. Z. Xu, T. Ostermayr, S. Petrovics, C. Klier, K. Iqbal, H. Ruhl, and T. Tajima, *Operating plasma density issues on large-scale laser-plasma accelerators toward high-energy frontier*, Phys. Rev. STAB **14,** 09130 (2011). G56,W42

497. Habs, D., Tajima, T., and Zamfir, V., *Extreme light infrastructure–nuclear physics (ELI–NP): new horizons for photon physics in Europe,* Nuclear Physics News 21 (1), 23 (2011). G28

498. Kawase, K; Kando, M; Hayakawa, T; Daito, I; Kondo, S; Homma, T; Kameshima, T; Kotaki, H; Chen, LM; Fukuda, Y; Faenov, A; Shizuma, T; Shimomura, T; Yoshida, H; Hajima, R; Fujiwara, M; Bulanov, SV; Kimura, T; Tajima, T., *Development of a sub-MeV X-ray source via Compton backscattering*, NIMA **637**, S141 (2011).

499. Mourou, G., Fisch, N., Malkin, V.M. Toroker, Z., Khazanov, E. A., Sergeev, A. M., Tajima, T., and Le Garrec, B., *Exawatt-Zetaawatt Pulse Generation and Applications,* Opt. Comm. **285**, 720 (2012). G120, W85

500. Homma, K., Habs, D., and Tajima, T., *Probing the semi-macroscopic vacuum by higher harmonic generation under focused intense laser fields,* Appl. Phys. B **106**, 229-240 (2012). [DOI 10.1007/s00340-011-4567-3].

501. H. Kiriyama, M. Suzuki, I. Daito, H. Okada, Y. Ochi, M. Sato, Y. Tamaoki, T. Yoshii, J. Maeda, S. Matsuoka, H. Kan, P. Bolton, A. Sugiyama, K. Kondo, S. Kawanishi, H. Daito, T. Kimura, and T. Tajima, *Development of a compact high-spetiotemporal- quality diode-pumped Yb:YAG thin-disk laser system using a nonlinear preamplifier,* Rev. Laser Engin. **40**, 143 (2012).

502. A. S. Pirozhkov, M. Kando, T. Zh. Esirkepov, P. Gallegos, H. Ahmed, E. N. Ragozin, A. Ya. Faenov, T. A. Pikuz, T. Kawachi, A. Sagisaka, J. K. Koga, M. Coury, J. Green, P. Foster, C. Brenner, B. Dromey, D. R. Symes, M. Mori, K. Kawase, T. Kameshima, Y. Fukuda, L. Chen, I. Daito, K. Ogura, Y. Hayashi, H. Kotaki, H. Kiriyama, H. Okada, N. Nishimori, T. Imazono, K. Kondo, T. Kimura, T. Tajima, H. Daido, P. Rajeev, P. McKenna, M. Borghesi, D. Neely, Y. Kato, S. V. Bulanov, *Soft X-ray harmonic comb from relativistic electron spikes*, Phys. Rev. Lett. 108, 135004 (2012). G50,W37

503. F.L. Zheng, H.Y. Wang, X.Q. Yan, J.E. Chen, Y. R. Lu, Z. Y. Guo, T. Tajima, and X. T. He, *TeV quasi-monoenergetic proton beam generation by an ultra-relativistically intense laser in the snowplow regime*, Phys. Plasmas **19**, 023111(2012): arXiv: 1101.2350v2 [plasma.phys.ph] (2011). W15

504. T. Ostermayr, S. Petrovics, K. Iqbal, C. Klier, T. Tajima, H. Ruhl, K. Najima, A. Deng, X. M. Zhang, B. F. Shen, J. S. Liu, R. X. Li, and Z. Z. Xu, *Laser plasma accelerator driven by a super-Gaussian pulse,* J. Plasma Phys. **78**, 447 (2012).

505. Mourou, G., and Tajima, T. *Exploring fundamental physics at the highest-intensity frontiers: IZEST,* SPIE Newsroom 10.1117(2012).

506. Kiriyama, H., Shimomura, T., Sasao, H., Nakai, Z., Ogami, M., Kondo, S., Kanazawa, S., Pirozhkovov, A., Mori, M., Fukuda, Y., Nishiuchi, M., Kando, M., Bulanov, S., Nagashima, K., Yamagiwa, M., Kondo, A., Tajima, T., Bolton, P., and Miyanaga, N., *Temporal contrast enhancement of petawatt-class laser pulses,* Opt. Lett. **37**, 3363 (2012). G38,W22

507. Homma, K., Habs, D., Mourou, G., Ruhl, H., and Tajima, T., *Opportunities of fundamental physics with high-intensity laser fields,* Prog. Theor. Phys. **193,** 224 (2012).

508. Jianhui Bin, Klaus Allinger, Walter Assmann, Günther Dollinger, Guido A. Drexler, Anna A. Friedl, Dieter Habs, Peter Hilz, Rainer Hoerlein, Nicole Humble, Stefan Karsch, Konstantin Khrennikov, Daniel Kiefer, Ferenc Krausz, Wenjun Ma, Dörte Michalski, Michael Molls, Sebastian Raith, Sabine Reinhardt, Barbara Röper, Thomas E. Schmid, Dörte Michalski, Toshiki Tajima, Johannes Wenz, Olga Zlobinskaya, Joerg Schreiber, and Jan J. Wilkens, *A laser-driven nanosecond proton source for radiobiological studies,* Appl. Phys. Lett. **101,** 243701 (2012). G57,W37

509. Tajima, T., and Homma. K., *Fundamental physics explored with high intensity laser,* Inter. J. Modern Phys. A **27**, 1230027 (2012). [DOI: 10:1142/S021775X1230027X]]

510. H.Y.Wang, X. Q. Yan, J. E. Chen, X. T. He, W. J. Ma, J. H. Bin, J. Schreiber, T. Tajima, and D. Habs, *Efficient and stable acceleration by irradiating a two-layer target with a linearly polarized laser pulse,* Phys. Plasmas **20**, 013101 (2013). G24,W16

511. F. L. Zheng, S. Z. Wu, H. C. Wu, C. T. Zhou, H. B. Cai, M. Y. Yu, T. Tajima, X. Q. Yan, and X. T. He, *Laser-driven collimated tens-GeV monoenergetic protons from mass-limited target plus preformed channel*, Phys. Plasmas **20**, 013107 (2013).

512. Adams, J.H., Tajima, T., ….et al. (JEM-EUSO collaboration), *An evaluation of the exposure in nadir observation of the JEM-EUSO mission,* Astropart. Phys.**44**, 76 (2013). G74

513. G. Mourou, W. Brocklesby, T. Tajima, J. Limpert, *The future is fibre accelerators,* Nature Photon. **7**, 258 (2013). G385, W251

514. T. Tajima, W. Brocklesby, and G. Mourou, *The next laser powerhouse,* Opt. Photon. News, May, 36 (2013).

515. J. H. Bin, W.J. Ma, K. Allinger, H.Y. Wang, D. Kiefer, S. Reinhardt, P. Hilz, K. Khrennikov, S. Karsch, X.Q. Yan, F. Krausz, T. Tajima, D. Habs, and J. Schreiber, *On the small divergence of laser-driven ion beams from nanometer thick foils, Phys. Plasmas* **20**, 073113 (2013).

516. Tajima, T., Mourou, G., Brocklesby, W., and Limpert, J., *Can fibre be the future of high-energy physics?,* CERN Courier, Oct. 21(2013).

517. Tajima, T., *The frontier of ultrahigh power lasers in Europe,* Rev. Laser Engin. **42**, 111 (2014).

518. T. Seggebrock, I. Dornmair, T. Tajima, G. Mourou, and F. Gru¨ner, *Theory of the Pulse Intensity-Duration Conjecture for FEL,* PTEP **2014,** 013A02 (2014); arXiv:1208.0741.

519. T. Ebisuzaki and T. Tajima, *Astrophysical ZeV acceleration in the relativistic jet from an accreting supermassive blackhole,* Astropart. Phys. **56**, 9 (2014).

520. W. T. Li, J. T. Liu, W. T. Wang, Z.J. Zhang, Q. Chen, Y. Tian, R. Qi, C. G. Yu, C. Weng, T. Tajima, R. X. Li, and Z. Z. Xu, *The phase-lock dynamics of the laser wakefield acceleration with an intensity-decaying laser pulse,* Appl. Phys. Lett. **104**, 093510 (2014).

521. W.S. Brocklesby, J. Nilsson, T. Schreiber, J. Limpert, A. Brignon, J. Bourderionnet, L. Lombard, V. Michau, M. Hanna, I. Zaouter, T. Tajima, Gérard Mourou, *ICAN as a new laser paradigm for high energy, high average power femtosecond pulses,* Eur. Phy. J. **223**, 1189 (2014).

522. G. Mourou and T. Tajima, *Summary of the IZEST science and aspiration*, Eur. Phys. J. Spec. Top. **223**, 979 (2014).

523. W. S. Brocklesby, G. Mourou, T. Tajima, and J. Limpert, *Overview of the International Coherent Amplyfication Network (ICAN),* Rev. Laser Engin. **42**, 149 (2014).

524. T. Tajima, *Laser Acceleration in Novel Media,* Eur. Phys. J. Spec. Top. **223**, 1037 (2014).

525. T. Ebisuzaki and T. Tajima, *Ponderomotive acceleration of charged Particles along the relativistic jets of an accreting blackhole,* Eur. Phys. J. Spec. Top. **223**, 1113 (2014).

526. M.L. Zhou, S. Zhao, H.Y. Wang, C. Lin, H.Y. Lu, Y.R. Lu, T. Tajima, X.T. He C.E. Chen, Y.Q. Gu, and X.Q. Yan, *Instability-Free Ion Acceleration by Two Laser Pulses,* Eur. Phys. J. Spec. Top. **223**, 1031 (2014).

527. R. Soulard, M. N. Quinn, T. Tajima, and G. Mourou, *A novel Laser architecture for space debris removal,* Acta Atsronuat **105**, 192 (2014). G28, W17

528. A. S Pirozhkov, Masaki Kando, T. Esirkepov, P. Gallegos, H. Ahmed, E. Ragozin, A. Faenov, Tatiana A Pikuz, T. Kawachi, A. Sagisaka, J. Koga, M. Coury, J. Green, P. Foster, C. Brenner, B. Dromey, Dan R Symes, M. Mori, K. Kawase, T. Kameshima, Y. Fukuda, L. M. Chen, I. Daito, K. Ogura, Y. Hayashi, H. Kotaki, H. Kiriyama, H. Okada, N. Nishimori, T. Imazono, K. Kondo, T. Kimura, T. Tajima, H. Daido, P. Rajeev, P. McKenna, M. Borghesi, D. Neel, Yoshiaki Kato, and S. V Bulanov, *High order harmonics from relativistic electron spikes,* New J. Phys. **16**, 093003 (2014).

529. L. Schmitz, E. Ruskov, B. H. Deng, H. Gota, D. Gupta, M. Tuszewski, J. Douglass, W. A. Peebles, M. Binderbauer, and T. Tajima*, Multi-channel Doppler backscattering measurements in the C-2 field reversed* configuration*,* Rev. Sci. Instrum. **85**, 11D401 (2014).

530. K. Ishikawa, T. Tajima, and Y. Tobita, *Anomalous radiative transitions,* Prog. Theor. Exp. Phys. **2015**, 013B02 (2015); doi: 10.1093/ptep/ptu168

531. C. Lau, P. C. Yeh, O. Luk, J. McClenaghan, T. Ebisuzaki, and T. Tajima, *Ponderomotive Acceleration by Relativistic Waves*, Phys. Rev. STAB **18**, 024401 (2015).

532. M.W. Binderbauer, T. Tajima, M. Tuszewski, L. Schmitz, H.Y. Guo, H. Gota, E. Garate, B.H. Deng, E. Trask, X. Yang, R. Andow, S. Aefsky, D. Barnes, N. Bolte, D.Q. Bui, F. Ceccherini, R. Clary, A.H. Cheung, K.D. Conroy, S.A. Dettrick, J.D. Douglass, P. Feng, L. Galeotti, F. Giammanco, E. Granstedt, D. Gupta, S. Gupta, A.A. Ivanov, J.S. Kinley, K. Knapp, S. Korepanov, M. Hollins, R. Magee, R. Mendoza, Y. Mok, A. Necas, S. Primavera, S. Putvinski, M. Onofri, D. Osin, N. Rath, T. Roche, J. Romero, N. Rostoker, J.H. Schroeder, L. Sevier, A. Sibley, A. Smirnov, Y. Song, L.C. Steinhauer, M.C. Thompson, A.D. Van Drie, J.K. Walters, W. Waggoner, P. Yushmanov, K. Zhai, and the TAE Team, A *High Performance Field Reversed Configuration (HPF),* Phys. of Plasma, **22**, 056110 (2015). G59,W48

533. H. Gota, M. Tuszewski, E. Trask, E. Garate, M.W. Binderbauer, T. Tajima, L. Schmitz, B.H. Deng, H.Y. Guo, S. Aefsky, I. Allfrey, D. Barnes, N. Bolte, D.Q. Bui, F. Ceccherini, R. Clary, K.D. Conroy, M. Cordero, S.A. Dettrick, J.D. Douglass, P. Feng, E. Granstedt, D. Gupta, S. Gupta, C. Hooper, J.S. Kinley, K. Knapp, S. Korepanov, A. Longman, R. Magee, R. Mendoza, Y. Mok, A. Necas, S. Primavera, S. Putvinski, M. Onofri, D. Osin, N. Rath, T. Roche, J. Romero, N. Rostoker, J.H. Schroeder, L. Sevier, A. Sibley, A. Smirnov, Y. Song, L.C. Steinhauer, M.C. Thompson, T. Valentine, A.D. Van Drie, J.K. Walters, W.Waggoner, X. Yang, P. Yushmanov, K. Zhai, and the TAE Team, *Improved Confinement of C-2 Field-Reversed Configuration Plasmas,* to be published in Fus. Sci. Tech. (2015).

534. T. Ebisuzaki, M. Quinn, S. Wada, L. Piotrowski, Y. Takizawa, M. Casolino, M. Bertaina, P. Gorodetzky, E. Parizot, T. Tajima, R. Soulard, and G. Mourou, *Demonstration designs for the remediation of space debris from the International Space Station,* Acta Astronau. **112**,102 (2015). G29

535. H. Y. Guo, M. W. Binderbauer, T. Tajima, R. D. Milroy, L. C. Steinhauer, X. Yang, E. G. Garate, H. Gota, S. Korepanov, A. Necas, T. Roche, A. Smirnov, and E. Trask, *Achieving a long-lived high-β plasma state by energetic beam injection,* Nature Comm. **6**, 6897 (2015).W20

536. G. Mourou, J. A. Wheeler, and T. Tajima, *Extreme Light: An intense pursuit of fundamental high energy physics,* Eur. Phys. News **46**, no.5, 31 (2015).

537. The JEM-EUSO Collaboration (….T. Tajima,…..), *The JEM-EUSO Mission: An Introduction,* Exp. Astron. **40**, 3 (2015).

538. The JEM-EUSO Collaboration (M. Casolino, ,….., T. Tajima….), *The JEM-EUSO*

Instrument, AperTo (Archivio Istituzionale Open Access dell'Universita di Torino) 2015. http://hdl.handle.net/2318/1653122 DOI:10.1007/s10686-014-9418-x

539. The JEM-EUSO Collaboration (….T. Tajima,…..), *Ultra high energy photons and neutrinos with JEM-EUSO***,** Exp. Astron. **40**, 215 (2015).

540. The JEM-EUSO Collaboration (….T. Tajima,…..), *Science of atmospheric phenomena with JEM-EUSO***,** Exp. Astron. **40**, 239 (2015).

541. The JEM-EUSO collaboration (….T. Tajima,…..), *JEM-EUSO: Meteor and nuclearite observations,* Exp. Astron. **40**, 253 (2015).

542. The JEM-EUSO collaboration (….T. Tajima,…..), *JEM-EUSO observational technique and exposure***,** Exp. Astron. **40**, 117 (2015).

543. The JEM-EUSO collaboration (….T. Tajima,…..), *The JEM-EUSO observation in cloudy conditions***,** Exp. Astron. **40**, 135 (2015).

544. The JEM-EUSO collaboration (….T. Tajima,…..), *The EUSO-Balloon pathfinder,* Exp. Astron. **40**, 281(2015).

545. The JEM-EUSO collaboration (….T. Tajima,…..), *Ground-based tests of JEM-EUSO components at the Telescope Array site, "EUSO-TA"* , Exp. Astron. **40**, 301(2015).

546. The JEM-EUSO collaboration (….T. Tajima,…..), *JEM-EUSO instrument,* Exp. Astron. **40**, 19 (2015).

547. The JEM-EUSO collaboration (….T. Tajima,…..), *Calibration aspects of the JEM-EUSO mission,* Exp. Astron. **40**, 91 (2015).

548. The JEM-EUSO collaboration (….T. Tajima,…..), *Science of atmospheric phenomena with JEM-EUSO,* Exp. Astron. **40**, 239 (2015).

549. The JEM-EUSO collaboration (….T. Tajima,…..), *The infrared camera onboard JEM-EUSO,* Exp. Astron. **40**, 61 (2015).

550. The JEM-EUSO collaboration (….T. Tajima,…..), *Performances of JEM-EUSO: angular reconstruction,* Exp. Astron. **40**, 153 (2015).

551. The JEM-EUSO collaboration (….T. Tajima,…..), *Performances of JEM-EUSO: energy and X-max reconstruction,* Exp. Astron. **40**, 183 (2015).

552. T. Tajima, *Wakefield acceleration: historical perspective and future prospect,* Il Nuovo Saggiatore **30**, 73 (2015).

553. J. H. Bin, W.J. Ma, K. Allinger, H.Y. Wang, D. Kiefer, S. Reinhardt, P. Hilz, K.Khrennikov,

S. Karsch, X.Q. Yan, F. Krausz, T. Tajima, D. Habs, and J. Schreiber , Ion Acceleration Using Relativistic Pulse Shaping in Near-Critical-Density Plasmas, Phys. Rev. Lett. **115**, 064801 (2015).

554. Allen Caldwell; Erik Adli; Lígia Amorim; Robert Apsimon; Theodoros Argyropoulos; Ralph Assmann; Anna-Maria Bachmann; Fabian Batsch; Jeremie Bauche; Marzia Bernardini; Robert Bingham; Bartolomej Biskup; Thomas Bohl; Chiara Bracco; Philip Burrows; Graeme Burt; Birger Buttenschön; Andy Butterworth; Michele Cascella; Swapan Chattopadhyay; Eric Chevallay; Silvia Cipiccia; Heiko Damerau; Lawrence Deacon; Paul Dirksen; Steffen Doebert; Ulrich Dorda; Eckhard Elsen; John Farmer; Stephane Fartoukh; Valentin Fedosseev; Eduard Feldbaumer; Ralph Fiorito; Ricardo Fonseca; Florence Friebel; Gunther Geschonke; Brennan Goddard; Alexander A. Gorn; Olaf Grulke; Edda Gschwendtner; Jan Hansen; Christoph Hessler; Steffen Hillenbrand; Wolfgang Hofle; James Holloway; Chengkun Huang; Mathias Hüther; Dino Jaroszynski; Lars Jensen; Simon Jolly; Atefeh Joulaei; Muhammed Kasim; Fearghus Keeble; Roberto Kersevan; Naveen Kumar; Yangmei Li; Shengli Liu; Nelson Lopes; Wei Lu; Jan Machacek;Scott Mandry; Irina Martin; Roberto Martorelli; Mikhail Martyanov; Stefano Mazzoni; Malika Meddahi; Lia Merminga; Oznur Mete; Vladimir A. Minakov; Jamie Mitchell; Joshua Moody; Anke-Susanne Müller; Zulfikar Najmudin; Tim Noakes; Peter Norreys; Veronika K. Berglyd Olsen; Jens Osterhoff; Erdem Oz; Ans Pardons; Kevin Pepitone; Alexey Petrenko; Gennady Plyushchev; Alexander Pukhov; Olaf Reimann; Karl Rieger; Stefan Roesler; Hartmut Ruhl; Tobias Rusnak; Friederike Salveter; Nicolas Savard; Janet Schmidt; Hans von der Schmitt; Andrei Seryi; Elena Shaposhnikova; Zheng Ming Sheng; Peter Sherwood; Luís Silva; Frank Simon; Lars Soby; Alexander Sosedkin; Roman I. Spitsyn; Toshiki Tajima; Roxana Tarkeshian; Helga Timko; Raoul Trines; Tobias Tueckmantel; Petr V. Tuev; Marlene Turner; Francesco Velotti; Victor Verzilov; Jorge Vieira; Helmut Vincke; Yelong Wei; Carsten P. Welsch; Matthew Wing; Guoxing Xia; Vitaly Yakimenko; Hao Zhang; Frank Zimmermann, *Path to AWAKE: Evolution of the concept,* Nucl. Instr. Methods A (2016). (online, Jan. 2, 2016) doi:10.1016/j.nima.2015.12.050. G32

555. T. Tajima, *Recent progress in laser ion acceleration*, in Laser-driven particle acceleration towards radiobiology and medicine, ed. A. Giulietti (Springer, Berlin, 2016)p. 295. http://www.springer.com/br/book/9783319315614

556. A. Giulietti and T. Tajima, *Lasers offer new tools to radiobiology and radiotherapy*, ibid. p.1.

557. T. Tajima and A. Necas, *Robustness of waves with a high phase velocity*, in Physics of Plasma-Driven Accelerator and Accelerator-Driven Fusion: the Proceedings of Norman Rostoker Memorial Symposium (AIP, NY, 2016). http://scitation.aip.org/content/aip/proceeding/aipcp/1721

558. L. Schmitz, E. Ruskov, B.H. Deng, M. Binderbauer, T. Tajima, H. Gota, M. Tuszewski, and the TAE Team, *Control of Ion Gyroscale Fluctuations via Electrostatic Biasing and Sheared E×B Flow in the C-2 Field Reversed Configuration*, in Physics of Plasma-Driven Accelerator and Accelerator-Driven Fusion: the Proceedings of Norman

Rostoker Memorial Symposium (AIP, NY, 2016).

559. M.W. Binderbauer, T. Tajima, M. Tuszewski, L. Schmitz, A. Smirnov, H. Gota, E. Garate, D. Barnes, B.H. Deng, E. Trask, X. Yang, S. Putvinski, R. Andow, N. Bolte, D.Q. Bui, F. Ceccherini, R. Clary, A.H. Cheung, K.D. Conroy, S.A. Dettrick, J.D. Douglass, P. Feng, L. Galeotti, F. Giammanco, E. Granstedt, D. Gupta, S. Gupta, A.A. Ivanov, J.S. Kinley, K. Knapp, S. Korepanov, M. Hollins, R. Magee, R. Mendoza, Y. Mok, A. Necas, S. Primavera, M. Onofri, D. Osin, N. Rath, T. Roche, J. Romero, J.H. Schroeder, L. Sevier, A. Sibley, Y. Song, L.C. Steinhauer, M.C. Thompson, A.D. Van Drie, J.K. Walters, W. Waggoner, P. Yushmanov, K. Zhai, and the TAE Team, *Recent Breakthroughs on C-2U: Norman's Legacy,* in ibid. (2016).W16

560. T. Tajima, G. Mourou, and J. Wheeler, *Extreme light in zeptoseconds* Laser Focus, **52,** no.4, p.27 (2016).

561. M. L. Zhou, X. Q. Yan, G. Mourou, J.A. Wheeler, J. H. Bin, J. Schreiber, and T. Tajima, *Proton Acceleration by Single-Cycle Laser Pulses Offers a Novel Monoenergetic and Stable Operating Regim*e, Phys. of Plasmas **23,** 043211 (2016).

562. D. P. Fulton, C. K. Lau, L. Schmitz, I. Holod, Z. Lin, T. Tajima, M. W. Binderbauer, and the TAE Team, *Gyrokinetic simulation of driftwave instability in field-reversed configuration,* Phys. of Plas. **23**, 056111(2016).

563. S. Gupta, D. C. Barnes, S. A. Dettrick, E. Trask, M. Tuszewski, B.H. Deng, D. Gupta, K. Hubbard, S. Korepanov, M. C. Thompson, K. Zhai, T. Tajima, and the TAE Team, *Transport studies in high-performance field reversed configuration plasmas*, Phys. Plas. **23**, 052307 (2016).

564. T. Matsumoto, J. Sekiguchi, T. Asai, H. Gota, E. Garate, I. Allfrey, T. Valentine, M. Morehouse, T. Roche, J. Kinley, S. Aefsky, M. Cordero, W. Waggoner, M. Binderbauer, T. Tajima, *Development of a magnetized coaxial plasma gun for compacttToroid injector for the C-2 Field-Reversed Configuration*, Rev. Sci. Instr. **87**, 053512 (2016).

565. Liming Chen, Yong Ma, Min Chen, Wenchao Yan, Dazhang Li, Kai Huang, Zhengming Sheng, Kazuhisa Nakajima, Toshiki Tajima, and Jie Zhang, *Generation of femtosecond γ-ray bursts stimulated by laser-driven hosing evolution*, Sci. Rept. **6**, 30491 (2016).

566. D. M. Farinella, C. K. Lau, X. M. Zhang, J. Koga, S. Taimourzadeh, Y. Hwang, K. Abazajian, N. Canac, T. Ebisuzaki, P. Taborek, and T. Tajima, *High energy photon emission from wakefields*, Phys. Plasmas **23**, 073107 (2016).

567. T. Matsumoto, J. Sekiguchi, T. Asai, H. Gota, E. Garate, I. Allfrey, T. Valentine, M. Morehouse, T. Roche, J. Kinley, S. Aefsky, M. Cordero, W. Waggoner, M. Binderbauer, and T. Tajima, *Development of a magnetized coaxial plasma gun for compact toroid injection into the C-2 field-reversed configuration device*, Rev. Sci. Instru. **87**, 053512 (2016).

568. T. Matsumoto, T. Roche, I. Allfrey, J. Sekiguchi, T. Asai, H. Gota, M. Cordero, E. Garate, J. Kinley, T. Valentine, W. Waggoner, M. Binderbauer, and T. Tajima, *Characterization of compact-toroid injection during formation, translation, and field penetration*, Rev. Sci. Instru. **87**, 11D406 (2016).

569. Zhang, X. M., Shen, B., Shi, Y., Zhang, L., Ji, L., Wang, X., Xu, Z., and Tajima, T., *Intense Harmonics Generation with Customized Photon Frequency and Optical Vortex*, New J. Phys. **18**, 083046 (2016).

570. L. Schmitz, D. Fulton, E. Ruskov, C. Lau, B.H. Deng, T. Tajima, M. Binderbauer, I. Holod, Z. Lin, H. Gota, M. Tuszewski, S.A. Dettrick, and L. Steinhauer, *Suppressed ion-scale turbulence in a hot high-β plasma,* Nature Comm. **7**, 13860 (2016).

571. D. Reid, C. Heyl, R. Thomson, R. Trebino, G. Steinmeyer, H. Fielding, R. Holtzwarth, Z. Zhang, P. Det'haye, T. Suedmeyer, G. Mourou, T. Tajima, D. Faccio, F. Harren, and G. Cerullo, *Roadmap on Ultrafast Optics* (Guest Ed., D. T. Reid), J. Optics, **18,** 093006 (2016).

572. X. M. Zhang, T. Tajima, D. Farinella, Y. M. Shin, G. Mourou, J. Wheeler, P. Taborek, P. S. Chen, and B. F. Shen, *X-ray Wakefield Acceleration and Betatron Radiation in Nanotubes*, Phys. Rev. AB **19**, 101004 (2016).

573. Wheeler, J. A., Mourou, G., and Tajima, T., *Laser technology for advanced acceleration: accelerating beyond TeV*, RAST **9**, 151(2016).

574. Y. Hwang, G. Anderson, C. Barty, D. Gibson, R. Marsh, and T. Tajima, in Proceedings of International Particle Accelerator Conference (IPAC'16), Busan, Korea, May 8-13, 2016, International Particle Accelerator Conference No. 7 (JACoW, Geneva, Switzerland, 2016), pp. 1885– 1888, 10.18429/JACoW-IPAC2016-TUPOW052.

575. T. Tajima, K. Nakajima, and G. Mourou, *Laser Acceleration*, Rivista del Nuovo Cimento **40**, 33 (2017).

576. T. Tajima, *Entrepreneurial Spirits and Fusion Research in North America* (北米における起業精神と核融合開発), J. Plasma Fus. Res. **93**, 21 (2017).

577. Asai, T., Matsumoto, T., Roche, T., Allfrey, I., Gota, H., Sekiguchi, J., Edo, T., Garate, E., Takahashi, T., Binderbauer, M., and Tajima, T., *Compact Toroid Injection Fueling on a Large-sized Field-Reversed Configuration*, Nucl. Fus. **57**, 076018 (2017).

578. C. Lau, D. Fulton, I. Holod, Z. Lin, M. Binderbauer, T. Tajima, and L. Schmitz, *Drift-wave Stabilities in the Field-Reversed Configuration*, Phys. Plasmas **24**, 082512 (2017).

579. H. Gota, M.W. Binderbauer, T. Tajima, S. Putvinski, M. Tuszewski, S. Dettrick, E. Garate, S. Korepanov, A. Smirnov, M.C. Thompson, E. Trask, X. Yang, L. Schmitz, Z. Lin, A.A. Ivanov, T. Asai, I. Allfrey, R. Andow, M. Beall, N. Bolte, D.Q. Bui, M. Cappello, F. Ceccherini, R. Clary, A.H. Cheung, K. Conroy, B.H. Deng, J. Douglass, A. Dunaevsky, P. Feng, D. Fulton, L. Galeotti, E. Granstedt, M. Griswold, D. Gupta, S. Gupta, K. Hubbard, I. Isakov, J.S. Kinley, K. Knapp, R. Magee, V. Matvienko, R. Mendoza, Y. Mok, A. Necas, S. Primavera, M. Onofri, D. Osin, N. Rath, T. Roche, J. Romero, T. Schindler, J.H. Schroeder,

    L. Sevier, D. Sheftman, A. Sibley' Y. Song, L.C. Steinhauer, T. Valentine, A.D. Van Drie, J.K. Walters, W. Waggoner, P. Yushmanov, and K. Zhai *Achievement of Field-Reversed Configuration Plasma Sustainment via 10 MW Neutral-Beam Injection on the C-2U Device*, Nucl. Fus. **57**, 116021 (2017).

580. J. Xu , A. Buck, S.-W. Chou, K. Schmid, C. M. S. Sears, B. Shen, T. Tajima, M. C. Kaluza, F. Krausz, L. Veisz , *Dynamics of electron injection in a laser-wakefield accelerator*, Phys. Plasm. **24**, 083106 (2017).

581. M. Onofri, P. Yushmanov, S. Dettrick, D. Barnes, K. Hubbard, and T. Tajima, *Magnetohydrodynamic transport characterization of a Field Reversed Configuration*, Phys. Plas. **24**, 092518 (2017). doi: http://dx.doi.org/10.1063/1.4994681

582. T. Asai, T. Matsumoto, T. Roche, I. Allfrey, H. Gota, J. Sekiguchi, T. Edo, E. Garate, T. Takahashi, M. Binderbauer, and T. Tajima, *Compact Toroid Injection Fueling on a Large-sized Field-Reversed Configuration*, Nucl. Fusion **57**, 076018 (2017).

583. Y. Hwang, G. Anderson, C. Barty, D. Gibson, R. Marsh, and T. Tajima, in Proceedings of 3rd North American Particle Accelerator Conference (NAPAC'16), Chicago, IL, 2016 (JACoW, Geneva, Switzerland, 2017), pp. 977– 979, 10.18429/JACoW-NAPAC2016-WEPOB35.

584. T. Tajima and R. X. Li, *Marriage of a 20keV superconducting XFEL with a 100PW laser: A new regime of science at Exawatts and zeptoseconds impacting on the society*, SPIE Newsroom (2018). http://spie.org/x128863.xml (DOI: 10.1117/2.2201804.02)

585. K. Mima, J. Fuchs, J. Alvalez, J.R. Marques, S.N. Chen, T. Tajima, and J. M. Perlado, *Self-modulation and anomalous collective scattering of laser produced intense ion beam in plasmas*, Matt. Rad. Extr. **3**, 127 (2018).

586. S. Hakimi, T. Nguyen, C.K. Lau, D. Farinella, H. Wang, P. Taborek, and T. Tajima, *Wakefield simulation of solid state plasma*, Phys. Plas. **25**, 023112 (2018).

587. A. Mizuta, T. Ebisuzaki, T. Tajima, and S. Nagataki, *Production of intense episodic Alfvén pulses: GRMHD simulation of black hole accretion disks*, Mont. Not. Roy. Ast. Soc. **479**, 2534 (2018).

588. H. Gota, I. Ishiwata, F. Tanaka, A. Hosozawa, T. Asai, T.Takahashi, J. Sekiguchi, T. Roche,

T. Matsumoto, S. Dettrick, Y. Mok, M. Binderbauer, and T.Tajima, *Internal Magnetic Field Measurements of Translated and Merged Field-Reversed Configuration Plasmas in the FAT-CM Device,* Rev. Sci. Inst. **89**, 10J114 (2018).

589. L. Schmitz, B. Deng, M. Thompson, H. Gota, C. Lau, D. Fulton, Z. Lin, T. Tajima, and M. Binderbauer, *Combination Doppler Backscattering/Cross-Polarization Scattering Diagnostic for the C-2W Field-Reversed Configuration*, Rev. Sci. Inst. **89**, (2018).

590. T. Tajima, *Short proton bunches rapidly accelerate energetic electrons*, Nature **561**, 318 (2018). doi: 10.1038/d41586-018-06669-7

591. F. Tanaka, T. Asai, J. Sekiguchi, Ts. Takahashi, J. Ishiwata, T. Edo, N. Ono, K. Matsui, S. Watanabe, D. Hishida, D. Kobayashi, Y. Hirose, A. Hosozawa, Y. Mok, S. Dettrick, T. Roche, H. Gota, M. W. Binderbauer, and T. Tajima, *Collisional merging process of field-reversed configuration plasmas in the FAT-CM device*, Plasma Fusion Research **13**, 3402098 (2018).

592. B.H. Deng, J.D. Douglass, T. Roche, E.V. Belova, M. Beall, M.W. Binderbauer, R. Clary, S.A. Dettrick, H. Gota, E. Granstedt, S. Korepanov, R. Magee, A. Necas, S. Putvinski, A. Smirnov, T. Tajima, M.C. Thompson, M. Tuszewski, A.D. Van Drie, X. Yang, K. Zhai, W. Horton, and the TAE Team, *First experimental measurementsof a new fast ion driven micro-burst instability in a field reversed configuration plasma*, Nucl. Fus. **58**, 126026 (2018).

593. T. Edo, T. Asai, F. Tanaka, S. Yamada, A. Hosozawa, Y. Kamino, H. Gota, T. Roche, I. Allfrey, D. Osin, R. Smith, M. Binderbauer, T. Matsumoto, and T. Tajima, *Performance Improvement of a Magnetized Coaxial Plasma Gun by adopting Iron-Core Bias Coil and Pre-Ionization Systems*, Plasma and Fus. Res. **13**, 3405062-3405062 (2018).

594. D. M. Farinella, J. Wheeler, A. Hussein, J. Nees, M. Stanfield N. Beier, G. Cojocaru, G. Ungureanu, M. Pittman, J. Demailly, E. Baynard, R. Fabbri, R. Secareanu, M. Masruri, A. Maksimchuk, K. Krushelnick, G. Mourou, T. Tajma, and F. J. Dollar, *Focusability of high intensity laser pulses after self-phase modulation in thin films,* J. Opt. Soc. Am. B **36,** 000A28 (2019).

595. R. M. Magee, A. Necas, R. Clary, S. Korepanov, M. C. Thompson, S. Nicks, T. Roche, M. Binderbauer, and T. Tajima, *Direct observation of ion acceleration from the beam-driven wave in a magnetic fusion experiment,* Nature Phys. **15**, 281 (2019). doi: 10.1038/s41567-018-0389-0

596. Gota, Hiroshi; Binderbauer, Michl; Tajima, Toshiki; Putvinski, Sergei; Tuszewski, Michel; Deng, B; Dettrick, Sean; Gupta, Deepak; Korepanov, Sergey; Magee, Richard; Roche, Thomas; Romero, Jesus; Smirnov, Artem; Sokolov, Vladimir; Song, Yuanxu; Steinhauer, Loren; Thompson, Matthew; Trask, Erik; Van Drie, Alan; Yang, Xiaokang; Yushmanov, Peter; Zhai, Kan; Schmitz, Lothar; Lin, Zhihong; Ivanov, Alexander; Asai, Tomohiko, *Formation of Hot, Stable, Long-Lived Field-Reversed Configuration Plasmas on the C-2W Device,* Nucl. Fus. **59**, 112009 (2019).

597. T. Dethe, H. Gill, D. Green, A. Greensweight, L. Gutierrez, M. He, T. Tajima, and K. Yang, *Causality and Dispersion Relations,* Am. J. Phys. **87**, 279 (2019). https://doi.org/10.1119/1.5092679

598. C.K. Lau, D.P. Fulton, J. Bao, Z. Lin, T. Tajima, L. Schmitz, S. Dettrick and the TAE Team, *Cross-separatrix simulations of turbulent transport in the field-reversed configuration*, Nucl. Fus. **59**, 066018 (2019).

599. Asai, T., Takahashi, T., Sekiguchi, J., Kobayashi, D., Okada, S., Gota, H., Roche, T., Inomoto, M., Dettrick, S., Mok, Y., Binderbauer, M., Tajima, T., and Takahashi, T., *Collisional merging formation of a field-reversed configuration in the FAT-CM device*, Nucl. Fus. **59**, 056024 (2019).

600. J. Bao, C. K. Lau, Z. Lin, H. Y. Wang, D. P. Fulton, S. Dettrick, and T. Tajima, *Global simulation of ion temperature gradient instabilities in a field-reversed configuration*, Phys. Plasma **26**, 042506 (2019).

601. J. G. Zhu, M. J. Wu, Q. Liao, Y. X. Geng, K. Zhu, C. C. Li, X. H. Xu, D. Y. Li, Y. R. Shou, T. Yang, P. J. Wang, D.H. Wang, J. J. Wang, C. E. Chen, X. T. He, Y. Y. Zhao, W. J. Ma, H. Y. Lu, T. Tajima, C. Lin**,** and X. Q. Yan, *Experimental demonstration of a laser proton accelerator with accurate beam control through image-relaying transport*, Phys. Rev. Accel. Beams **22**, 061302 (2019).

602. J. A. Wheeler, G. Mourou, and T. Tajima, *Science of High Energy, Single-Cycled Lasers,* Rev. Acc. Sci. Tech., **10**, 227 (2019).

603. K. Matsumoto, H. Saitoh, D. Tan, A. Shiro, K. Nakai, A. Komatsu, M. Tsujimoto, R. Yasuda, T. Kawachi, T. Tajima, and F. Tamanoi, *Destruction of tumor mass by gadolinium-loaded nanoparticles irradiated with monoenergetic X-rays: Implications for the Auger therapy,* Sci. Rep. **9**, 13275 (2019).

604. O. Jakobsson, A. Bonatto, Y. Li, Y. Zhao, R. P. Nunes, B. Williamson, G. Xia, T. Tajima, *Tailored plasma-density profiles for enhanced energy extraction in passive plasma beam dumps*, Plas. Phys. Contr. Fus. **61**, 124002 (2019).

605. T. Ebisuzaki and T. Tajima, *Wakefield acceleration towards ZeV from a black hole emanating astrophysical jets***,** Int. J. Mod. Phys. A**34**, 1943018 (2019).

606. B. S. Nicks, T. Tajima, D. Roa, A. Necas, and G. Mourou, *Laser-Wakefield Application to Oncology*, Int. J. Mod. Phys. A **34**, 1943016 (2019).

607. V. Shiltsev and T. Tajima, *Summary of the "Workshop on Beam Acceleration in Crystals and Nanostructures" (Fermilab, June 24-25, 2019),* Int. J. Mod. Phys. A**34**, 1943001 (2019).

608. K. Nakajima, J. Wheeler, G. Mourou, and T. Tajima, *Novel laser-plasma TeV electron-*

positron linear collider, Int. J. Mod. Phys. A **34**, 1943003 (2019).

609. S. Hakimi, X. M. Zhang, C. Lau, P. Taborek, F. Dollar, T. Tajima, *X-ray Laser Wakefield Acceleration in a Nanotube,* Int. J. Mod. Phys. A **34**,1943011 (2019).

610. A. A. Sahai, T. Tajima, P. Taborek, and V. Shiltsev, *Solid-state Tube Accelerator using Surface Wave Wakefields in Crystals,* Int. J. Mod. Phys. A**34**, 1943009 (2019).

611. A. Sahai, T. Tajima, and V. Shiltsev, *Schemes of Laser Muon Acceleration: ultra-short, micron-scale beams,* Int. J. Mod. Phys. A**34,** 1943008 (2019).

612. D. M. Farinella, M. Stanfield, N. Beier, T. Nguyen, S. Hakimi, T. Tajima, F. Dollar, *Demonstration of thin film compression for short-pulse X-ray generation,* Int. J. Mod. Phys. A**34**, 1934015 (2019).

613. H. Gota, M.W. Binderbauer, T. Tajima, S. Putvinski, M. Tuszewski, B.H. Deng, S.A. Dettrick, D.K. Gupta, S. Korepanov, R.M. Magee, T. Roche, J.A Romero, A. Smirnov, V. Sokolov, Y. Song, L.C. Steinhauer, M.C. Thompson, E. Trask, A.D. Van Drie, X. Yang, P. Yushmanov, K. Zhai, I. Allfrey, R. Andow, E. Barraza, M. Beall, N.G. Bolte, E. Bomgardner, F. Ceccherini, A. Chirumamilla, R. Clary, T. DeHaas, J.D. Douglass, A.M. DuBois, A. Dunaevsky, D. Fallah, P. Feng, C. Finucane, D.P. Fulton, L. Galeotti, K. Galvin, E.M. Granstedt, M.E. Griswold, U. Guerrero, S. Gupta, K. Hubbard, I. Isakov, J.S. Kinley, A. Korepanov, S. Krause, C.K. Lau, H. Leinweber, J. Leuenberger, D. Lieurance, M. Madrid, D. Madura, T. Matsumoto,V. Matvienko, M. Meekins, R. Mendoza, R. Michel, Y. Mok, M. Morehouse, M. Nations, A. Necas, M. Onofri, D. Osin, A. Ottaviano, E. Parke, T.M. Schindler, J.H. Schroeder, L. Sevier, D. Sheftman, A. Sibley, M. Signorelli, R.J. Smith, M. Slepchenkov, G. Snitchler, J.B. Titus, J. Ufnal, T. Valentine, W. Waggoner, J.K. Walters, C. Weixel, M. Wollenberg, S. Ziaei, L. Schmitz, Z. Lin, A.A. Ivanov, T. Asai, E.A. Baltz, J.C. Platt, *Formation of Hot, Stable, Long-Lived Field-Reversed Configuration Plasmas on the C-2W Device*, Nucl. Fusion **59**, 112009 (2019).

614. D. Kobayashi, T. Asai, Ts. Takahashi, J. Sekiguchi, H. Gota, S. Dettrick, Y. Mok, M. Binderbauer, and T. Tajima, *Evaluation of Translation Velocity Control by Auxiliary Coils For Collisional Merging Formation of FRCs by 2-D Resistive MHD Simulation*, Plas. Fus Res. **15**, 2402020(2019).

615. Ronghao Hu, Zheng Gong, Jinqing Yu, Yinren Shou, Meng Lv, Zhengming Sheng, Toshiki Tajima and Xueqing Yan, *Super brilliant attosecond electron beams from intense X- ray laser driven nanoscale wavebreaking*, Int. J. Mod. Phys. A **34**, 1943012 (2019).

616. J. G. Zhu, M. J. Wu, K. Zhu, Y. X. Geng, Q. Liao, D. Y. Li, T. Yang, M. Easton, C. C. Li, X. H. Xu, Y. R. Shou, J. Q. Yu, Z. Gong, Y. Y. Zhao, P. J. Wang, D. H. Wang, L. Tao, C. E. Chen, W. J. Ma, H. Y. Lu, T. Tajima, G. Mourou, C. Lin, X. Q. Yan, *Demonstration of tailored energy deposition in a laser proton accelerator*, Phys. Rev. Acc. Beam **22**, 061302 (2020).

617. R. H. Hu, Z. Gang, J. Q. Yu, Y. R. Shou, M. Lv, Z. M. Sheng, T. Tajima, X. Q. Yan, *Ultrahigh Brightness Attosecond Electron Beams from Intense X-ray Laser Driven Plasma Photocathode,* in Beam Acceleration in Crustals and Nanostructures, Eds. S. Chattopadhay, G. Mourou, V. Shiltsev, T. Tajima (World Scientific, Singapore, 2020).

618. A. A. Sahai, T. Tajima, P. Taborek, and V. Shiltsev, *Solid-state Tube Accelerator using Surface Wave Wakefields in Crystals,* in Beam Acceleration in Crystals and Nanostructures, Eds. S. Chattopadhay, G. Mourou, V. Shiltsev, T. Tajima (World Scientific, Singapore, 2020) p.123.

619. B. S. Nicks, T. Tajima, D. Roa, A. Necas, and G. Mourou, *Laser-Wakefield Application to Oncology*, in Beam Acceleration in Crystals and Nanostructures, Eds. S. Chattopadhay, G. Mourou, V. Shiltsev, T. Tajima (World Scientific, Singapore, 2020) p. 223.

620. A. Sahai, T. Tajima, and V. Shiltsev, *Schemes of Laser Muon Acceleration: ultra-short, micron-scale beams,* in Beam Acceleration in Crystals and Nanostructures, Eds. S. Chattopadhay, G. Mourou, V. Shiltsev, T. Tajima (World Scientific, Singapore, 2020) p.99.

621. V. Shiltsev and T. Tajima, *Summary of the "Workshop on Beam Acceleration in Crystals and Nanostructures" (Fermilab, June 24-25, 2019),*in Beam Acceleration in Crystals and Nanostructures, Eds. S. Chattopadhay, G. Mourou, V. Shiltsev, T. Tajima (World Scientific, Singapore, 2020) p. 1.

622. S. Hakimi, X. M. Zhang, C. Lau, P. Taborek, F. Dollar, T. Tajima, *X-ray Laser Wakefield Acceleration in a Nanotube,* in Beam Acceleration in Crystals and Nanostructures, Eds. S. Chattopadhay, G. Mourou, V. Shiltsev, T. Tajima (World Scientific, Singapore, 2020) p. 171.

623. D. M. Farinella, M. Stanfield, N. Beier, T. Nguyen, S. Hakimi, T. Tajima, F. Dollar, *Demonstration of thin film compression for short-pulse X-ray generation,* in Beam Acceleration in Crystals and Nanostructures, Eds. S. Chattopadhay, G. Mourou, V. Shiltsev, T. Tajima (World Scientific, Singapore, 2020) p.215.

624. T. Ebisuzaki and T. Tajima, *Wakefield acceleration towards ZeV from a black hole emanating astrophysical jets***,** in Beam Acceleration in Crystals and Nanostructures, Eds. S. Chattopadhay, G. Mourou, V. Shiltsev, T. Tajima (World Scientific, Singapore, 2020) p. 243.

625. T. Tajima, X. Q. Yan, and T. Ebisuzaki, *Wakefield acceleration,* Rev. Modern Plasma Phys. **4,** 7 (2020). https://link.springer.com/article/10.1007/s41614-020-0043-z

626. T. Tajima and V. Malka, *Laser plasma accelerator,* Plas. Phys. Cont. Fus.**62**, 034004 (2020).

627. N. E. Canac, K. N. Abazajian, T. Tajima, T. Ebisuzaki and S. Horiuchi, *Observational Signatures of the Gamma Ray from Bright Blazars and Wakefield Theory,* MNRAS **493,**

2229 (2020). arXiv:1709.06535.

628. C. Scott, S. Dettrick, T. Tajima, R. Magee, and E. Mjolsness, *Detection and Prediction of a Beam-Driven Mode in Field-Reversed Configuration Plasma With Recurrent Neural Networks,* Nucl. Fus. **60**, 126025 (2020).

629. C. K. Lau, D. P. Fulton, J. Bao, Z. Lin, S. Dettrick, M. Binderbauer, T. Tajima, and L. Schmitz, *Electrostatic quasi-neutral formulation of global cross-separatrix particle simulation in field-reversed configuration geometry,* Phys. Plas. **27**, 082504 (2020).

630. G. Abdellaoui,…., T. Tajima,….. (EUSO collaboration), *Ultra-violet imaging of the night-time earth by EUSO-Balloon towards space-based ultra-high energy cosmic ray observations,* Astropart. Phys.**111,** 54 (2020).

631. B. Nicks, R. Magee, A. Necas, and T. Tajima, *Beam-Driven Ion-Cyclotron Modes in the Scrape-off Layer of a Field-Reversed Configuration,* Nucl. Fus. **61**, 016004 (2021).

632. T. Tajima, *Nano-targeted therapy of cancer and corona-induced pneumonia with compact X-ray source / laser accelerator,* to be published in JST Overview Workshop Report "Nanotechnology/Materials research realizes new ability to cope with COVID" (2021), 俯瞰ワークショップ報告書　ナノテクノロジー・材料分野　区分別分科会「ナノテク・材料研究が実現する新興感染症対策能力の持続的強化 ～ポストコロナ時代を見据えて～」（JST, CRDS-FY2020-WR-05, 2021) p. 17. https://www.jst.go.jp/crds/covid-19/pdf/crds20201218.pdf

633. T. Ebisuzaki and T. Tajima, *Astrophysical Wake Acceleration Driven by Relativistic Alfvenic Pulse Emitted from Bursting Accretion Disk,* Astropart. Phys. **128**, 102567 (2021).

634. T. Tajima, A. Necas, G. Mourou, S. Gales, M. Leroy, *Fusion Triggered Liquid-phase Transmutator Monitored and Controlled Real-Time by CAN Laser,* Fus. Sci. Tech. **77**, 251(2021). DOI: 10.1080/15361055.2021.1889918

635. D. Roa, H. Moyses, S. Leon, B. Hamrick, G. Sarria, T. Tajima, A. Necas, C. Guzman, O. Paucar, A. Gonzales, R. Challco, M. Montoya, Z. Arqque, A. Gonzales, and J. Hernandez, *Rationale for Using a C-Arm Fluoroscope to Deliver a Kilovoltage Radiotherapy Treatment to COVID-19 Patients,* Med. Dos. **46,** 1(2021) Letter. DOI:https://doi.org/10.1016/j.meddos.2020.07.008

636. D. Roa, H. Moyses, S. Leon, B. Hamrick, G. Sarria, B. Li, T. Tajima, A. Necas, C. Guzman, O. Paucar, A. Gonzales, R. Challco, M. Montoya, Z. Arqque, A. Gonzales, and J. Hernandez, *Dose Simulations of an Early 20th Century Kilovoltage Pneumonia Radiotherapy Technique Performed with a Modern Fluoroscope,* Med. Dos. **46,** 74 (2021). DOI: https://doi.org/10.1016/j.meddos.2020.08.002

637. M. Stanfield, N. Beier, S. Hakimi, H. Allison, D. Farinella, A. E. Hussein, T. Tajima,

and F. Dollar, *Multi-millijoule few cycle pulses from staged compression for strong and high field science*, Opt. Exp. **29**, 9123 (2021).

638. W. H. Wang, J. Bao, X. S. Wei, Z. Lin, G. J. Choi, S. Dettrick, A. Kuley, C. Lau, P. F. Liu, T. Tajima, *Effects of equilibrium radial electric field on ion temperature gradient instability in the scrape-off layer of a field-reversed configuration,* Plas. Phys. Control. Fus. **63**, 065001 (2021).

639. T. Tajima, *Robust matter: Plasma* (強靭な物質：プラズマ), J. Plas. Fus. Res. **97**, 396 (2021)..

640. Y. Higashi, K. Matsumoto, H. Saitoh, A. Shiro, Y. Ma, M. Laird, S. Chinnathambi, A. Birault, T. L. H. Doan, R. Yasuda, T. Tajima, T. Kawachi, and F. Tamanoi, *Iodine containing porous organosilica nanoparticles trigger destruction of tumor spheroids upon irradiation with monochromatic X-ray: DNA double strand breaks and preferential effect of K-edge energy X-ray*, Sci. Rep. **11**, 14192 (2021).

641. G. Player, R. Clary, S. Dettrick, S. Korepanov, R. M. Magee, T. Tajima, and the TAE Team, *A Novel Technique for In Situ Calibration of the C-2W Electromagnetic Neutral Particle Analyzer Utilizing Machine Learning*, Rev. Sci. Inst. **92**, 053542(2021).

642. B.S. Nicks, S. Hakimi, E. Barraza-Valdez, K.D. Chestnut, G.H. DeGrandchamp, K.R. Gage, D. B. Housley, G. Huxtable, G. Lawler, D.J. Lin, P. Manwani, E.C. Nelson, G.M. Player, M.W.L. Seggebruch, J. Sweeney, J.E. Tanner, K. Thompson, and T. Tajima, *Electron Dynamics in the High-Density Laser-Wakefield Acceleration Regime*, Photonics **8**, 216 (2021).

643. Gota, H., Binderbauer, M., Tajima, T., Smirnov, A., Putvinski, S., Tuszewski, M., Dettrick, S., Gupta, D., Korepanov, S., Magee, R., Park, J., Roche, T., Romero, J., Trask, E., Yang, X., Yushmanov, P., Zhai, K., Schmitz, L., Lin, Z., Ivanov, A., Asai, T., Baltz, T., and Platt, J., *Overview of C-2W: High-Temperature, Steady-State Beam-Driven Field-Reversed Configuration Plasmas*, Nucl. Fus. **61**, 106039 (2021).

644. X.S. Wei, W.H. Wang, Z. Lin, G.J. Choi, S. Dettrick, C. Lau, P.F. Liu, and T. Tajima, *Effects of zonal flows on ion temperature gradient instability in the scraped-off layer of a field-reversed configuration,* Nuc. Fus. **61**, 126039 (2021).

645. S.A. Dettrick, D.C. Barnes, F. Ceccherini, L. Galeotti, S.A. Galkin, S. Gupta, K. Hubbard, O. Koshikarov, C.K. Lau, Y. Mok, A. Necas, B.S. Nicks, M. Onofri, J. Park, S.V. Putvinski, L.S. Steinhauer, K. Yakymenko, P.N. Yushimanov, T. Tajiam, E.V. Belonova, Z. Lin, W. Wang, and X. Wei, *Simulation of equilibrium, stability, and transport in advanced FRCs,* Nucl. Fus. **61**, 106038 (2021).

646. Asai, T., Kobayashi, D. , Seki, T., Tamura, Y., Watanabe, T., Sahara, N., Takahashi, T., Morelli, J., Gota, H., Roche, T., Magee, R., Binderbauer, M., Tajima, T., Inomoto, M., and

Takahashi, T., *Observation of self-organized FRC formation in a collisional-merging experiment,* Nucl. Fus. **61**, 096032 (2021).

647. D. Roa, S. Leon, O. Paucar, A. Gonzales, E. Olguin, S. Leon, B. Schwarz, V. Moskvin, M. Alva-Sanchez, H. Moyses, M. Glassell, N. Correa, A. Shankar, B. Hamrick, G.R. Sarria, B. Li, T. Tajima, A. Necas, C. Guzman, R. Challco, M. Montoya, Z. Arqque, M. Zapata, D. Rueda, A. Gonzales, F. Marquez, R. Neira, W. Vilca, J. Mendez, and J. Hernandez, *Monte Carlo Simulations and Phantom Validation of Low-Dose Radiotherapy to the Lungs for an Interventional Radiology C-Arm Fluoroscope,* Physica Medica **94**, 24 (2022).

https://doi.org/10.1016/j.ejmp.2021.12.014

648. T. Tajima, A. Necas, T. Massard, and S. Gales, *East meets West again now to Tackle the Global Energy Crises*, Uspekhi **192,** 1280 (2022) (Usp. Phys. **65**, 1193 (2022)).

649. Y. Kato, T. Ebisuzaki, and T. Tajima, *Wakefield Acceleration in a Jet from a Neutrino Driven Accretion Flow around a Black Hole*, Ap. J. **929**, 42 (2022).

650. J. Tanner, A. Necas S. Gales, G. Mourou, and T. Tajima, *Fusion Driven Transmutation of Transuranics in a Molten Salt,* accepted by FST (2022).

651. D. Roa, J. Kuo, H. Moyses, P. Taborek, T. Tajima, G. Mourou, and F. Tamanoi, *Fiber-Optic Based Laser Wake-field Accelerated Electron Beams and Potential Applications in Radiotherapy Cancer Treatments,* Photonics **9**, 403 (2022).

652. A. Necas, T. Tajima, G. Mourou, and K. Osvay, *Laser ion acceleration in a near critical density trap*, Photonics **9**, 453 (2022).

653. A. Sergeev and T. Tajima, *Preface*, Uspekhi **192**, 1187 (2022) (Usp. Phys. **65**, 1187(2022)).

654. E. Barraza-Valdez, T. Tajima, D. Strickland, and D. Roa, *Laser Beat Wave Acceleration near Critical Density*, Photonics **9,** 476 (2022). doi:10.3390/photonics9070476

655. T. Tajima and T. Massard, *Bio-inspired materials for the energy challenge of the Century*, to be published in Proceedings of the Nanotech France 2022 International Conference and Exhibition, Paris, France (2022).

656. S. Leon, D. Roa, B. Schwarz, O. Paucar, N. Correa, M. Glassell, A. Shankar, A. Gonzales, E. Olguin, V. Moskvin, M. Alva-Sanchez, H. Moyses, B. Hamrick, G.R. Sarria, B. Li, T. Tajima, A. Necas, C. Guzman, R. Challco, M. Montoya, Z. Arqque, M. Zapata, D. Rueda, A. Gonzales, F. Marquez, R. Neira, W. Vilca, J. Mendez, and J. Hernandez, *Low-Dose Radiotherapy to the Lungs using an Interventional Radiology C-arm Fluoroscope,* accepted by Biomed. Phys. Engin. Exp. (2022).

657. G. Player, R. Magee, T. Tajima, E. Trask, K. Zhai, *Enhancing Historical Electron Temperature Data with an Artificial Neural Network in the C-2U FRC,* Nucl.

Fus. **62**, 126019 (2022).

658. Yinren Shou, Pengjie Wang, Seong Geun Lee, Yong Joo Rhee, Hwang Woon Lee Jin Woo Yoon, Jae Hee Sung, Seong Ku Lee, Zhuo Pan, Defeng Kong, Zhusong Mei, Jianbo Liu, Shirui Xu, Zhigang Deng, Weimin Zhou Toshiki Tajima, Il Woo Choi, Xueqing Yan, Chang Hee Nam, Wenjun Ma, *Brilliant femtosecond-laser-driven hard x-ray flashes from carbon nanotube plasmas*, Nature Photon. (2022). doi.org/10.1038/s41566-022-01114-8

659. J.A. Wheeler, P.-G. Bleotu, A. Naziru, R. Fabbri, M. Masruri, R. Secareaunu, D.M. Farinella, G. Cojucaru, R. Ungrureaunu, E. Baynard, J. Demally, M. Pittman, R. Dabu, I. Dancus, D. Ursescu, D. Ros, T. Tajima, G. Mourou, *Compressing High Energy Lasers through Optical Plastic Films*, Photonics **9**, 715 (2022).

660. D. Papp, A. Necas, N. Hafz, T. Tajima, S. Gales, G. Mourou, G. Szabo, and C. Kamperidis, *Laser Wakefield Photoneutron Generation with Few-Cycle High-Repetition-Rate Laser Systems,* Photonics **9**, 826 (2022).

661. T. Tajima, *Wakefield acceleration: Entering also into the high density regime,* （航跡場加速：高密度領域へも）(in Japanese), J. Part. Accel. Soc. Jpn. **19**, 171 (2022).

662. T. Ebisuzaki, T. Tajima, and B. C. Barish, *Wakefield Acceleration in the Universe*, Int. J. Mod. Phys. D **32,** 2330001 (2023).

663. T. Tajima, *Frontiers that intense laser could open*, Rev. Las. Engin. **51**, 296 (2023).

664. Dongyu Li, Y. Tong, M. Wu, Z. Mei, K. Wang, C. Y. Lu, Y. Y. Zhao, W. J. Ma, K. Zhu, Y. X. Geng, G. Yang, C. J. Xiao, J. Chen, C. Lin, T. Tajima, X. Q. Yan, *Introduction of Research Work on Laser Proton Acceleration and Its Application Carried out on Compact Laser–Plasma Accelerator at Peking University,* Photonics **10**, 132 (2023).

665. R. M. Magee, K. Ogawa, T. Tajima, I. Allfrey, H. Gota, P. McCarroll, S. Ohdachi, M. Isobe, S. Kamio, V. Klumper, H. Nuga, M. Shoji, S. Ziaei, M. W. Binderbauer, and M. Osakabe, *First measurements of pB^{11} fusion in a magnetically confined plasma*, Nature Comm. **14**, 955 (2023). doi.org/10.1038/s41467-023-36655

666. T. Tajima and P. Chen, *Preface,* Photonics **10,** 292 (2023).

667. G. B. Huxtable, N. Eltawil, W.-X. Feng, G. Player, W. H. Wang, T. Tajima, and T. Ebisuzaki, *Signatures of Wakefield Acceleration in Astrophysical Jets via Gamma Rays and UHECRs*, MNRAS **522**, 5402(2023).

668. Y. W. Hwang, H. Effarah, T. Tajima, C. Barty, R. Marsh, and D. Gibson, *Electron beam characterization through K-edge filtering of laser Compton-scattered X-rays,* Phys. Rev. AB **23**, 072802 (2023).

669. A. Sahai, M. Golkowski, S. Gedney, T. Katsouleas, G. Andonian, G. White, J. Stohr, P. Muggli, D. Filipetto F. Zimmermann, T. Tajima, G. Mourou, and J. Resta-Lopez, *PetaVolts per meter Plasmonics: Snowmass21 White Paper,* J. Instrum. **18**, P07019 (2023). DOI 10.1088/1748-0221/18/07/P07019

670. S. Gupta, P. Yushmanov, D. C. Barnes, S. A. Dettrick, M. Griswold, M. Onofri, T. Tajima, M. Binderbauer, *Potential development and electron energy confinement in an expanding magnetic field divertor geometry,* Phys. Plas. **30,** 083516 (2023). https://doi.org/10.1063/5.0150490

671. S. Nicks, S. Putvinski, and T. Tajima , *Fully kinetic simulations of the Alfv ́en-ion cyclotron instability in a high-beta plasma,* Phys. Plas. **30,** 102108 (2023).

672. S. Abe, J. Adams, D. Allard, ……T. Ebisuzaki,....., T. Tajima, …….M. Zotov, *Developments and results in the context of the JEM_EUSO program obtained with the ESAF simulation and analysis framework*, Eur. Phys. J. C **83**, 1028 (2023). https://urldefense.com/v3/__https://link.springer.com/article/10.1140/epjc/s10052-023-12090-w__;!!CzAuKJ42GuquVTTmVmPViYEvSg!NNYozn83EBPQFGFFQnPSbvquCaAujM9bwP5MClJWpXPw7-gHUi0R2RwymAaWEh-1B-aPqTb-m4M4CUgx_gMnFRmCsqaKbbKt$

Submitted paper(s):

K. Noguchi, T. Tajima, W. Horton, *Structure formation through magnetohydrodynamicacl instabilities in protoplanetoary disks,* preprint UT Austin IFS report (Oct.3, 2000).

W. Chou, G. Mourou, N. Solyak, T. Tajima, M. Velasco, *HFiTT – Higgs Factory in Tevatron Tunnel.* Fermilab-TM-2558-APC (2013).

J.Q. Yu, Z. Najmoudin, R. H. Hu, T. Tajima, H. Y. Lu, and X. Q. Yan, *Ultra-brilliance isolated attosecond gamma-ray light source from nonlinear Compton scattering*, submitted to Commsphys (2018).

M. X. Navarro, M. Zamiri, M. E. Griswold, G. Kulcinski, M. Lagally, T. Tajima, *Outer Divertor Damage Characterization from Deuterium Plasma Bombardment in Graphene- Coated Tungsten in the C-2W Device,* to be submitted to Fus. Sci. Tech. (2018).

R. Arinello, S. Corde, X. Davoine, H. Ekerfelt, F. Fiuza, M. Gilljohann, L. Gremillet, M. Hogan, Y. Mankovska, H. Piekarz, P. San Miguel Claveria, V. Shiltsev, P. Taborek, and T. Tajima, *Channeling Acceleration in Crystals and Nanostructures and Studies of Solid Plasmas: New Opportunities,* submitted to Proc. US Comm. Stud. Fut. Part. Phys. (Snowmass '21) (2022).

G. Abdellaoui, ……., T. Tajima,…….., et al. (JEM-EUSO), *EUSO-SPB1 Mission and Science*, submitted to Ap. J. (2022).

M. Mori, E. B-Valdez, H. Kotaki, Y. Hayashi, M. Kando. K. Kondo, T. Kawachi, D. Strickland and T. Tajima, *Proof-of-Principle Experiment of the High Density Laser Wakefield Acceleration*, Submitted to Phys. Rev. Lett. (2023).

T. Asai, T. Takahashi, D. Kobayashi, T. Seki, M. Bingo, J. Morelli, N. Mizuguchi, S. Dettrick, H. Gota, T. Roche, T. Matsumoto, T. Tajima, M. Binderbauer, *Demonstration of refueling/reflexing of FRC core via axial plasmoid injection,* submitted to Nucl. Fusion (2023).

M. F. Gilljohann, Y. Mankovska, P. Claveria, B. Martinez, A. Sytov, L. Bandiera, R. Ariniello, X. Davoine, H. Ekerfelt, F. Fiuza, L.Gremillet, A. Knetsch, A. Matheron, H. Piekarz, D. Storey, P. Taborek, T. Tajima, V. Shiltsev, S. Corde, *Channeling Acceleration in Crystals and Nanostructures and Studies of Solid Plasmas: New Opportunities,* submitted to JINST (2023).

T. Tajima and T. Massard, *Bio-Inspired Wall Materials for Fusion Reactors and Transmutators,* submitted to Mat. Renew. Sust. Ener. (2023).

T. Asai, T. Seki, D. Kobayashi, T. Roche, and T. Tajima, *Observation of Rapid Flux Coalescence in Merging Field-Reversed Configurations*, submitted to Phys. Plasma (letter) (2023).

M. Mori, E. Barraza-Valdez, H. Kotaki, Y. Hayashi, M. Kando, K. Kondo, T. Kawachi, D. Strickland, and T. Tajima, *Experimental realization of near-critical-density laser wakefield acceleration: Efficient pointing 100-keV-class electron beam generation by microcapillary targets*, submitted to AIP Advance (2023).

W. H. Wang, X. S. Wei, Z. Lin , C. Lau, S. Dettrick, T. Tajima, *A gyrokinetic simulation model for 2D equilibrium presheath potential in the scrape-off layer of a field-reversed configuration,* to be submitted to Phys. Plas.(2023).

Gota, H., Smirnov, A., Binderbauer, M., Tajima, T., Putvinski, S., Titus, J., Nations, M., Roche, T., Trask, E., DeHaas, T., Dettrick, S., Granstedt, E., Gupta, D., Ivanov, A., Korepanov, S., Magee, R., Matsumoto, T., Romero, J., Yushmanov, P., Zhai, K., Schmitz, L., Lin, Z., Krasheninnikov, S., Baltz, T., Platt, J., and Asai, T., *Enhanced Plasma Performance in C-2W Advanced Beam-Driven Field-Reversed Configuration Experiments,* submitted to Nucl. Fus. (2023).

R. Groenwald, A. Veksler, F. Ceccherini, A. Necas, B. Nicks, D. Barnes, T. Tajima, and S. Detytrick, *Accelerated kinetic model for global macro stability studies of high-beta fusion reactors*, submitted to Phy. of Plas. (2023).

Realization of LWFA:

Some of Experimental Breakthrough Works

H. Hamster et al., PRL **71**, 2725(1993): Observation of excitation of laser wakefield, observation of THz radiation from wakefield.

C. Durfee and H. Milchberg, PRL **71**, 2409 (1993): Plasma channel formation.

K. Nakajima et al., 1994/95, Phys. Scripta **T52**, 61 (1994), PRL **74**, 4428 (1995): First observation of ultrahigh gradient electron acceleration from Self-modulated LWFA. W372

A. Modena et al., Nature **377**, 606 (1995): Observation of SMLWFA electrons around 40MeV.

J. Marques et al. PRL **76**, 3566 (1996); C. Siders, et al., PRL **76**, 3570 (1996): Direct observation of laser wakefields.

H. Dewa et al., NIM PRA **410**, 357 (1999): Observation of 100MeV electrons from LWFA.

S. Mangle, et al. Nature **431**, 535 (2004); C. Geddes et al., Nature 431, 538 (2004); J. Faure et al. Nature **431**, 541 (2004): First (quasi-)monoenergetic 100MeV level electron acceleration by LWFA.

C. Geddes et al., PoP **12**,056709 (2005): guiding of relativistic laser in preformed channel.

W. Leemans et al., Nature Phys.**2**, 696 (2006): First 1GeV level electron acceleration by LWFA

J. Faure et al., Nature **444**, 737 (2006): Optical injection of electrons to LWFA.

N. Matlis, et al., Nature Phys. **2**, 749 (2006): First direct visualization of LWFA,

N. Hafz, et al. Nature Photon. **2**, 571 (2009): Stable self-guided LWFA at 1GeV level.

K. Schmid, et al. Phys. Rev. STAB **13,** 91301(2010): stable injection of electrons into LWFA by density jump.

A. Buck et al. Nature Phys. (2011): on-line measurement of magnetic signal of LWFA.

J.S. Liu et al. Phys. Rev. Let. 107, 035001 (2011); B. Pollock, et al., Phys. Rev. Let. 107, 045001 (2011) : First demonstration of multistage LWFA.

G. Mourou, et al. Nature Photon. **7**, 258 (2013): Development of high rep-rated high efficiency laser fit for LWFA.

H. T. Kim, et al. Phys. Rev. Lett. **111**, 165002(2013): First 3GeV level acceleration with LWFA.

Applications of LWFA:

THz radiation from LWFA: H. Hamster, et al., PRL (1993) see above.: Plasma waves generated by LWFA yielding THz radiation.

Transition radiation from LWFA: W. Leemans, et al. PRL **91**, 074802 (2003): Observation of transition radiation in THz from electrons by LWFA.

Ultrafast radiolysis: R. Crowell et al., Rad. Phys. Chem. **70**, 501 (2004); B. Brozek-Pluskab et al., Rad. Phys. Chem. **72**, 149 (2005): LWFA applications to radiolysis. *In vitro* cell irradiation by LWFA electrons: C. Richter, et al. J. Rad. Measur. **46** April 11 (2011).

Very high electron energy (VHEE) electron therapy based on LWFA: K. Svendsen et al., Sci. Rept. **11**, 5844 (2021).

First laser wakefield as a relativistic flying mirror to create coherent X-ray pulse: Relativistic Flying Mirrors, M. Kando et al., PRL **99**, 135001 (2007).

Gamma-ray emissions from LWFA electrons for intraopertaive radiation therapy (IORT): A. Giulietti, et al., PRL **101**, 105002 (2008): high intensity gamma ray emissions from LWFA usable for dosage such as IORT; High dose radiotherapy by LWFA with laser monitor, G. Grittani, G. Korn, and C. Lazzarini, patent (submitted 2016); Electrons from LWFA for endoscopic therapy: T. Tajima, G. Mourou, D. Roa, and A. Necas, Prov. Patent (2019) T0089.0041.P1.

Undulator radiation from LWFA electrons: M. Fuchs, et al., Nature Phys. **5**, 826(2009): First application of undulator X-ray radiation from LWFA.

X-ray FEL by LWFA: W. Wang, et al. Nature **595**, 516 (2021); M. Labat et al., Nature Photon. DOI :10.1038/s41566-022-01104-w ; K. Nakajima, Nat.Phys. **4**, 92 (2008) : LWFA-driven free electron laser for X-rays.

Betatron radiation from LWFA electrons: S. Kneip, et al., Nature Phys. **6**, 980 (2009): Observation of brilliant X-rays from betatron oscillations of LWFA electrons; applications to X-ray imaging and tomography: A. Hussein, et al., Sci. Rpt. **9**, 3249 (2019). Phase contrast imaging by LWFA betatron X-rays: S. Fourmaux, et al., Opt. Lett. **36**, 2426 (2011)), and mammography diagnosis with this technique, J. P. Kieffer, et al., Proc. SPIE 12582, Compact Radiation Sources from EUV to Gamma-rays: Development and Applications, 1258206 (8 June 2023).

All optical Compton gamma rays: K. Ta Phuoc, et al., Nature Photon. **6**, 308 (2012); S. Chen et al., Phys. Rev. Lett. **110**, 155003 (2013); N. Powers et al., Nature Photon. **8**, 28 (2013); F. Albert et al., Plasm. Phys. Control. Fusion **56**, 084015(2014); J. Cole et al. PNAS **115**, 6335 (2019). Also, all optical nonlinear coherent Compton scattered X-rays off LWFA accelerated compact electron bunch (C. H. Nam, presented at Onassis Lecture (2023)).

Cosmic ray genesis: Y.Kuramitsu et al. Phys.Plasmas **18,** 010701 (2011): First experimental demonstration of cosmic ray particle acceleration by LWFA in astrophysical settings.

Application to high energy ion acceleration with LWFA: B. F. Shen et al., Phys. Rev. STAB **12**, 12103 (2009); F. L. Zheng, et al., Phys. of Plasmas 19, 023111 (2012).

Coherent X-rays from the Higher Harmonic Generation in the cusp of LWFA: *Soft X-ray harmonic comb from relativistic electron spikes*, A. Pirozhkov et al., Phys. Rev. Lett. **108**, 135004 (2012).

High energy cosmic ray acceleration: P. Chen et al. *Plasma wakefield acceleration for ultrahigh-energy cosmic rays,* Phys. Rev. Lett. **89**,161101(2002).

Lithography light sources at shortest wavelengths with LWFA-driven FEL: K. Nakajima, G. Mourou, and T. Tajima, Patent filed (P23946FR) in 2013.

Test of relativity at PeV gammas with fs accuracy using LWFA suggested: T. Tajima et al. Prog. Theor. Phys. **125,** 617 (2011).

Application to crystal LWFA: T. Tajima, Eur. Phys. J. **228**, 1037 (2014).

Application to efficient and compact non-radiative high energy beam dump by wakefields and energy recovery, T. Tajima and A. Chao, patent applied (2007) and assigned (2012); Wu et al. P.R. STAB **13**,101303 (2010). An experimental demonstration shown: S. Chou et al., Phys. Rev. Lett. **117,** 144801 (2016).

Application of LWFA electrons to measure plasma electric and magnetic fields, C. J. Zhang et al., Phys. Rev. Lett. **119**, 064801 (2017); D. Schaeffer, W. Fox, et al., Phs. Rev. Lett. **122**, 245001 (2019).

CNT (carbon nanotube) driven LWFA experiments, Y. R. Shou et al. (2021).

LWFA cancer therapy including endoscopic radiation therapy (and also coronal viruses) at the high density regime of LWFA (micsrospic scales): B. Nicks, et al., IJMPA (2019), also provisional patent T. Tajima et al.,T0089_0041_P1. (2019). D. Roa et al. Photonics **9**, 403(2022); experimental realization, K. Svendsen, et al., Sci. Rpt. **11**, 5844 (2021).

High-repetition few-attosecond electron beams and X (and gamma)-rays in X-ray LWFA from crystals (such as betatron radiations): Z. F. Liang, B. F. Shen, X. M. Zhang, and L. G. Zhang, Matt. Rad. Extr. **5**, 054401 (2020); X.M. Zhang et al. Phys. Rev. AB **19**, 101004 (2016).

LWFA-driven Photonuclear neutron generation for transmutation: D. Papp, A. Necas, N. Hafz, T. Tajima, S. Gales, G. Mourou, and C. Kamperidis, Photonics **9**, 826 (2022).

Ion-branch of LWFA acceleration observed by ion beam-driven ion-cyclotron wave-driven wakefields, which effectively accelerated ions in a magnetized plasma: R. Magee, et al., Nature Phys. **15**, 281 (2019); multi-GeV ion acceleration by LWFA, X. Zhang, et al., (2023).

Venture capital company Tau Systems started applications and products of LWFA (Austin, TX).

Other related avenues of wakefield acceleration triggered by the LWFA concept:

Ponderomotive acceleration ahead of the intense EM pulse: M. Ashour-Abdalla et al. Phys. Rev. A, **23**, 1906 (1981).

PBWA (Plasma Beat Wave Acceleration) works: Joshi's Group (starting with Clayton et al. PRL **54**, 2343 (1985)) and Kitagawa's group etc. Have tried to induce wakefields by beat wave since mid-1980's.

PWFA (Plasma Wakefield Acceleration) works: J. Rosenzweig's Group, A. Ogata's Group, Siemann-Joshi's Group etc. Have demonstrated to accelerate electrons by the electron beam generated wakefields since 1990-2010's. Multi-10's GeV electron acceleration.

PDPWFA (Proton Driven Plasma Wakefield Acceleration) works: A. Caldwell's Group (starting with A. Caldwell, et al. Nature Phys. **5,** 363 (2009)) uses ion beam to drive wakefield for acceleration.

Astrophysical evidence of wakefield acceleration, Gamma ray variability from blazars and microquasars: P. S. Chen, T. Tajima, and Y. Takahashi, Phs. Rev. Let. **89**, 161101 (2002); F.Y.Chang et al., Phys. Rev. Lett. **102**, 111101 (2009); T. Ebisuzaki and T. Tajima, Astropart. Phys. **56**, 9 (2014). B. Barish and his LIGO Group and Fermi Gamma Ray Observatory observed the simulataneus gravitational waves and gamma ray burst arising from GRB170817A , identifiable as LWFA (2017).

Impacts of wakefield acceleration in laser developments: high reprated, high efficiency fiber laser (Coherent Amplification Network), G. Mourou, W. Brocklesby, T. Tajima, and J. Limpert, Nature Photon. **7**, 258 (2013); high intensity, coherent single-cycled lasers, G. Mourou et al., Eur. Phys. J. **223**, 1181 (2014); T. Tajima and G. Mourou, US papetnt appl. #619531182 (2014); application to space debris removal, T. Ebisuzaki et al., Acta, Astronaut. **112**, 102 (2015).

More generally, laser wakefield research has driven the ultrafast ultraintense laser developments overall. The employment of CPA technique (1985 and on), its derivatives, and other laser technologies (some mentioned above) have been spurred significantly over the years (for decades). This is particularly noteworthy by the recognition of the 2018 Nobel Prize on the CPA as part of its legacy and growth closely related to LWFA.

PATENTS

1. Tajima, T., *Laser Driven Compact Ion Accelerator*, US Patent 6,867,419B2 (filed: March 29, 2002; date of patent: March 15, 2005).

2. Tajima, T., *Laser Driven Compact Ion Accelerator*, US Patent 6,906,338B2 (filed: Jan 8, 2001; date of patent: June 14, 2005).

3. Tajima, T., Daido, H., Murakami, M., Hishikawa, Y., *粒子線治療装置 (Beam Therapy Machine)*, Japan Patent applied 2006-197382、Japanese patent 2008-022994(filed: July 19, 2006; date of patent: Feb.7, 2008), (date of patent May 27, 2011).

4. Tajima, T., Bulanov, S., Esirkepov, T., *イオン加速方法および装置 (Ion Accelerator Method and the Associated Machine), Japanese patent appl. # 2007-034924*, Japan Patent 4953243 (filed February 15, 2007; date of patent: March 23, 2012).

5. Kando, M., Chen, L.-M., Tajima, T., Kato, Y., *レーザー駆動高コントラスト単色高強度コヒーレントX線発生装置及びその発生方法 (Laser-driven, High-contrast, Monoenergetic, High-intensity, Coherent X-ray Source and its Generation Method)*, Japan Patent applied 2007-122045, Japan patent 2008-277204 (filed March 7, 2007).

6. Tajima, T., Chao, A. W., *ビーム終端方法およびビーム終端装置 (Beam Stopping and its Energy Recovery Using Plasma)*, Japan Patent applied 2007-314155 (filed December 5, 2007). (patented Nov. 28, 2012).

7. Mourou, G., Tajima, T., Fisch, N., Malkin, V., and Toroker, Z., *Method for the production of ultrashort and ultrahigh peak power laser pulses and system for putting into practice this method* (filed July 13, 2011).

8. Tajima, T., Mourou, G., and Gales, S., *Arrangement for generating a proton beam and an installation for transmutation of nuclear wastes*, application # 12290303.2 (filed Sept. 14, 2012).

9. Nakajima, K., Mourou, G., and Tajima, T., *Compact, efficient, high average power FEL for EUV lithography at 13.5nm*, Ref. P23946FR (2013).

10. Nakajima, K., Mourou, G., and Tajima, T., *Compact, efficient, high average power FEL for EUV lithography at 6.7nm* (2013).

11. Tajima, T., and Mourou, G., *Solid media wakefield accelerators*, submitted March 14 (2014) #61953182, US Application No. 14/658648 (2015).

12. Tajima, T., *Schwinger fiber accelerator*, submitted March 18, 2014 #61954918. (this has been consolidated with #13).

13. Mourou, G., Soulard, R., and Tajima, T., *Femtosecond laser with high power pulse,* 218267FR, submitted (2014).

14. Binderbauer, M. and Tajima, T., *Conversion of High-Energy Photons into Electricity,* US Patent 9,324,897 B2 (Filed: Jan. 1,2011; granted: April 26,2016).

15. Binderbauer, M. and Tajima, T., *Conversion of High-Energy Photons into Electricity,* US Patent 9,570,644 B2 (Filed: Mar. 31, 2016; grated: Feb. 14, 2017).

16. G. Mourou, T. Tajima, Dispositif heuristique mettant en oeuvre un équipement de production d' impulsions laser FR1352786.

17. Gérard Mourou,Toshi Tajima,Nathaniel J. Fisch, Vladimir M. Malkin, Zeev Toroker. "Method for the production of ultrashort and ultrahigh peak power laser pulses and system for putting into practice this method". N/SL/55468

18. M. L. Zhou, X. Q. Yan, T. Tajima, G. Mourou, J. Wheeler, *Generation of an ultrashort ion bunch*, (filed 2015), European Patent FR/14.10.15/ FRA 1559764 (2018).

19. Michl Binderbauer, Vitaly Bystritskii, and Toshiki Tajima, *Systems and methods for forming and maintaining a high performance FRC,* filed (2015), EU PATENT APPROVED 19210201.0-1212 (2020).

20. G. Mourou, J. Wheeler, T. Tajima, M. Zhou, and X. Yan, *generation of an ultrashort ion bunch*, submitted for French patent (2016).

21. G. Mourou, J. Wheeler, T. Tajima, and J. C. Chanteloup, *Laser game changer,* submitted for a French patent (2017).

22. T. Tajima, A. Necas, and M. Binderbauer, *Systemsand methods for FRC-Based Transmutator and radioisotope generator,* (filed Aug.1, 2017). T0089.0026.P1

23. T. Tajima and A. Necas, *First wall for fusion reactor,* (filed Aug. 11, 2017) T0089.0021.P1 (consolidated into T0089.0027.WO, Mar.1, 2022).

24. T. Tajima, G. Mourou, and A. Necas, *Systems and methods for liquid phase based transmutation with laser assisted monitoring,* (filed Aug. 16, 2017) T0089.0028.P2

25. T. Tajima and A. Necas, *Transmutation by external neutron source with real-time feedback,* (filed Nov. 26, 2017). T0089.0030.P1

26. T. Tajima and A. Necas, *Systems of controlled neutron sources for supercritical segmented transmutator,* (filed March 7, 2018). T0089.0031.P1

27. T. Tajima, A. Necas, and A. Muschnikov, *Artificial diamond-based materials for the first*

wall of nuclear devices, (April 27, 2018). T0089.0027.P2

28. T. Tajima, G. Mourou, and A. Necas, Systems and methods for laser neutron genereation for startup and control of liquid-phase based transmutation field, (June, 24, 2018). T0089.0033.P1

29. T. Tajima, M. Binderbauer, and A. Necas, Systems and methods for electrostatic accelerator driven neutron generation for startup and control of liquid-phase based transmutation, (July 2, 2018). T0089.0034.P1.

30. K. Matsumoto, H. Saitoh, D. Tan, A. Shiro, K. Nakai, A. Komatsu, M. Tsujimoto, R. Yasuda, T. Kawachi, T. Tajima, and F. Tamanoi, *Destruction of tumor mass by gadolinium-loaded nanoparticles irradiated with monoenergetic X-rays: Implications for the Auger therapy,* submitted for a provisional patent (with Kyoto University, QST) (2018)

31. T. Tajima, G. Mourou, R. Dante, and A. Necas, Systems and methods for compact wakefield accelerated electrons and X-rays for cancer diagnostics and treatment, (March 18, 2019). T0089_0041_P1. PCT/US20/23394 (March 18, 2020).

32. M. Binderbauer, V. Bystritskii, T. Tajima, *Systems and methods for merging and compressing compact tori ,* US patent 10,665,351 (May, 2020).

33. H. Gota and T. Tajima, *System and methods for forming and maintaining high energy and temperature FRC plasma via spheromak merging and neutral beam injection",* US patent application no. 17 / 860,294 (July 8, 2022).

34. T. Tajima and H. Gota, *System and methods for flow and shear flow control of FRC plasma system,* US provisional patent T0089.0046.P2 (Aug. 30, 2022).

35. F. Tamanoi, T. Tajima, *High-Z atom-containing nanoparticles irradiated with a monochromatic X-ray and cancer therapy with this,* 62/907,043 (Sep. 27, 2019), PCT/JP20/36367 (Sep. 25, 2020).

36. T. Tajima and A. Necas, *Carbon negative reactors,* T0089.0027.P3 (Mar.1, 2021). Consolidated into T0089.0027.WO (Mar.1, 2022).(processed on Oct. 3, 2023).

37. Y.Shimabukuro and T. Tajima, *Method and apparatus for producing, storing, and separating Helium-3,* submitted for patent comm.(10/24/2023).

38. Y. Shimabukuro, G. Koumarianou, T. Tajima, and T. Massard, *Aneutronic fusion reactor and their wall system including energy conversion capability*, submitted to patent comm. (10/25/2023).