Toshiki Tajima

List of Publications (3/23/2025)

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: 35737; h-index: 83; i10-index 367 as of 3/23/2025 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). G6707, 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. Barish'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). G1389, 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). G2413, 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.

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

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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).

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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).

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14. T. Tajima and P. Chen, eds. Progress of Laser Accelerator and Future Prospects (MDPI, Basel, 2023).
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