Toshiki Tajima

List of Publications (9/7/2022)

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: 30779; h-index: 79; i10-index 338 as of 11/18/2021 Google Scholar. Only the top 10 cited papers have been updated with Google as of 11/18/2021. 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 that were counted based on search from "All Databases" with search parameters: {AU=(tajima, Toshiki OR tajima, pT.) AND TS=physics) OR (AU=(tajima, Toshiki OR tajima, T.) AND TS=plasma*) OR (AU=(tajima, Toshiki OR tajima, T.) AND TS=laser*) OR (AU=(tajima, Toshiki OR tajima, T.) AND TS=accelerator*), Timespan=All years}. The total number of citations: 16853; h-index: 57; average citations per item: 21.61 as of 03/05/2018 through Web of Science. 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.

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: 17700; h-index: 60; as of 11/18/2021 through Web of Science. Only the top 20 cited papers have been updated with Web of Science as of 11/18/2021.

Executive summary == 5 Most Representative Papers:

A. Tajima, T. and Dawson, J.M., *Laser Electron Accelerator*, Phys. Rev. Lett. **43**, 267 (1979).
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).
The first experimental realization of laser wakefield acceleration was carried out (its early report was in Phys. Scripta, 1994).

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

The pioneering optical property of nanoclusters was considered. Later such led to nanostructured wakefield acceleration (see the book "Beam Acceleration in Crystals and Nanostructures" (2020)).

D. 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 collsion, which was observed in 2016 (led to Dr. Barrish's simultaneous discovery with gravitational waves (Nobel prize in 2017)).

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

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

BOOKS (and dedicated journal volume)

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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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6. Tajima, T. and Shibata, K., Plasma Astrophysics, (Addison-Wesley, Reading,MA, 1997). Reprinted (Perseus, Boulder, CO, 2002). G290

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

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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, Uspekhi Forum on Climate Change and Global Energy Issues (Russian Academy of Sciences, Moscow, 2022).

ARTICLES

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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

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