

Date: 16 Jan 2025

Metrology - The art and science of calibration

<https://www.iter.org/node/20687/art-and-science-calibration>
[Latest ITER Newsline: <https://www.iter.org/whatsnew/444>]

From Ignition in the Laboratory to Fusion Energy

<https://lasers.llnl.gov/news/ignition-laboratory-fusion-energy>

Fusion-Grade Steel Production Breakthrough ‘Could Dramatically Reduce Reactor Costs’

<https://www.nucnet.org/news/fusion-grade-steel-production-breakthrough-could-dramatically-reduce-reactor-costs-1-5-2025>

State-of-the-art fusion simulation leads three scientists to the 2024 Kaul Foundation Prize

<https://www.pppl.gov/news/2025/state-art-fusion-simulation-leads-three-scientists-2024-kaul-foundation-prize>

ORNL Researchers Leverage Summit to Study Electron Behavior in ITER Tokamak

<https://www.hpcwire.com/off-the-wire/ornl-researchers-leverage-summit-to-study-electron-behavior-in-iter-tokamak/>

Energetic Particles Could Help Control Plasma Flares at the Edge of a Tokamak

<https://www.world-energy.org/article/48518.html>

Nuclear fusion could be the future of clean energy if it can overcome these hurdles

<https://www.fastcompany.com/91257044/nuclear-fusion-future-clean-energy-hurdles>

Fusion energy Canada’s opportunity to lead in the clean energy revolution

<https://troymedia.com/viewpoint/fusion-energy-canadas-opportunity-to-lead-in-the-clean-energy-revolution/>

Ministers pledge record £410m to support UK nuclear fusion energy

<https://www.theguardian.com/environment/2025/jan/16/ministers-pledge-record-410m-to-support-uk-nuclear-fusion-energy>

AI tackles disruptive tearing instability in fusion plasma

<https://www.eurekalert.org/news-releases/1070092>

Continuous cryogenic pellet injection system developed for tokamak fueling

<https://phys.org/news/2025-01-cryogenic-pellet-tokamak-fueling.html>

Primordial Solar Energy - The Power of the Stars The BIG HOT Question: How Close are We To Fusion Energy?

<https://mae.ucsd.edu/seminar/2025/primordial-solar-energy-power-stars-big-hot-question-how-close-are-we-fusion-energy>

China unveils ‘Crimson Skyblade’ in nuclear fusion quest for unlimited clean energy

<https://www.scmp.com/news/china/science/article/3294906/china-unveils-crimson-skyblade-nuclear-fusion-quest-unlimited-clean-energy>

Collaboration between industry and academia powers ITER’s HRNS Development

<https://www.bigsciencesweden.se/news-media/news/collaboration-between-industry-and-academia-powers-iter-s-hrns-development/>

Chinese researchers develop linear plasma device to advance core materials research for ‘artificial sun’

<https://www.globaltimes.cn/page/202501/1326851.shtml>

Fresh, direct evidence for tiny drops of quark-gluon plasma

<https://phys.org/news/2025-01-fresh-evidence-tiny-quark-gluon.html>

Supra thermal ions in burning plasmas physics explained

https://www.spacedaily.com/reports/Supra_thermal_ions_in_burning_plasmas_physics_explained_999.html

Cosmic shock waves: Unraveling the mystery of electron acceleration

<https://phys.org/news/2025-01-cosmic-unraveling-mystery-electron.html>

Constellation Energy to acquire Calpine for \$16.4bn

<https://www.neimagazine.com/news/constellation-energy-to-acquire-calpine-for-16-4bn/>

X-ray flashes from a nearby supermassive black hole accelerate mysteriously

<https://www.eurekalert.org/news-releases/1070102>

UK government considering role for SMRs in AI expansion

<https://www.world-nuclear-news.org/articles/uk-government-considering-role-for-smrs-in-ai-expansion>

U.S. Department of the Treasury Releases List of Qualifying Technologies for Clean Electricity Credits

<https://home.treasury.gov/news/press-releases/jy2787>

LLNL Creates World’s Brightest X-Ray Source with NIF and Novel Metal Foams

<https://lasers.llnl.gov/news/llnl-creates-worlds-brightest-x-ray-source-nif-novel-metal-foams>

Solving Canada’s low-carbon puzzle

<https://www.neimagazine.com/analysis/solving-canadas-low-carbon-puzzle/>

Centre reconstitutes Atomic Energy Commission

<https://economictimes.indiatimes.com/news/india/centre-reconstitutes-atomic-energy-commission/articleshow/117211229.cms>

[Of Interest] Warner Bros. Discovery Launches In Partnership With IAEA: ‘Good To Know’, First Nuclear Science Films On Discovery Channel

<https://www.iaea.org/newscenter/pressreleases/warner-bros-discovery-launches-in-partnership-with-iaea-good-to-know-first-nuclear-science-films-on-discovery-channel>

Recent Peer-Reviewed Articles of Interest

Prediction of radiation belt relativistic electron phase space density using artificial neural networks

<https://pubs.aip.org/aip/pof/article/37/1/016615/3330328/Prediction-of-radiation-belt-relativistic-electron>

Zonal fields as catalysts and inhibitors of turbulence-driven magnetic islands

<https://pubs.aip.org/aip/pop/article/32/1/010701/3330731/Zonal-fields-as-catalysts-and-inhibitors-of>

Design of an adjustable low-temperature linear microwave plasma source for atmospheric pressure applications

<https://pubs.aip.org/aip/pop/article/32/1/013502/3330665/Design-of-an-adjustable-low-temperature-linear>

Numerical study of turbulent flow boiling heat transfer in structured cooling channels using lattice Boltzmann method with advanced outlet boundary conditions

<https://pubs.aip.org/aip/pof/article/37/1/013349/3330671/Numerical-study-of-turbulent-flow-boiling-heat>