quantum beam science

an Open Access Journal by MDPI

IMPACT FACTOR 1.3

CITESCORE 2.8

New Challenges in Electron Beams

Guest Editor:

Dr. Wei Jiang
School of Electronic Science and Engineering, University of Electronic Science and Technology of China, Chengdu, China

Deadline for manuscript submissions:
30 April 2025

Message from the Guest Editor

This SI mainly introduces the latest progress and applications of high-power electron beams in various vacuum electron devices (VEDs), including the gyrotron, gyro-traveling-wave tube, traveling-wave tube, klystron, backward wave oscillator, series sheet beam devices, pseudospark, etc. The purpose is to attract novel and advanced research work related to the design, experimental implementation, and application of high-power electron beams. We also welcome manuscripts on the integration of high-power electron beams in other fields.

The scope of this Special Issue incorporates but not limited to the following:

- Novel electron gun design for various vacuum electron devices;
- Electron emission theory, material, and cathode investigation;
- Phenomenon investigation for breakdown, ionization, and halo in the electron beam generation and transportation processes;
- Thermal analysis for high-power electron optics systems;
- Applications such as accelerators, vacuum displays, materials processing technologies, electron beam lithography, etc.;
- Related interdisciplinary technologies to improve current electron beam performance or extend the application scope.

quantum beam science

IMPACT FACTOR 1.3

CITESCORE 2.8

an Open Access Journal by MDPI

Editor-in-Chief

Prof. Dr. Klaus-Dieter Liss
School of Mechanical, Materials, Mechatronic and Biomedical Engineering, University of Wollongong, Wollongong 2522, Australia

Message from the Editor-in-Chief

Quantum Beam Science focuses on application of quantum beams for the study and characterization of materials in their widest sense, and developments of quantum beam sources, instrumentation and facilities. Quantum beams include synchrotron radiation, neutron beams, electrons, lasers, muons, positrons, ions. The journal covers disciplines including, solid state physics, chemistry, crystallography, materials science, biology, geology, earth- and planetary materials, and engineering. Articles presenting multiple quantum beams for complementary studies are welcome.

Author Benefits

Open Access: free for readers, with article processing charges (APC) paid by authors or their institutions.
High Visibility: indexed within Scopus, ESCI (Web of Science), CAPlus / SciFinder, Inspec, Astrophysics Data System, and other databases.
Journal Rank: CiteScore - Q2 (*Nuclear and High Energy Physics*)

Contact Us

Quantum Beam Science Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland

Tel: +41 61 683 77 34
www.mdpi.com

mdpi.com/journal/qubs
qubs@mdpi.com
𝕏@QuBS_MDPI