

## Special Issue

# RF-Based Undulators and High-Gradient Accelerator Fed by High-Frequency Electromagnetic Devices

### Message from the Guest Editors

One of the recurring themes of this Special Issue is the collection of ideas and suggestions that pave the way to compact FEL/Compton Back-Scattering (CBS) sources for high-brightness VUV-X ray production. This Special Issue is similar to the previous ones ([https://www.mdpi.com/journal/applsci/special\\_issues/Oscillator-Amplifier-Free\\_Electron\\_Lasers](https://www.mdpi.com/journal/applsci/special_issues/Oscillator-Amplifier-Free_Electron_Lasers)), and evokes a discussion regarding the possibility of designing high-gradient accelerators and electromagnetic undulators, both employing high-frequency RF sources. Although significant progress was made towards the development of the associated technologies, a clear statement on their availability, in the near or distant future, is still lacking. This Special Issue, therefore, intends to provide constructive criticism in this direction, as well as discussing the associated theoretical, experimental and design aspects.

---

### Guest Editors

Prof. Dr. Giuseppe Dattoli  
ENEA/Fusion Department, Frascati Research Center, Rome, Italy

Dr. Emanuele Di Palma  
ENEA Centro Ricerche Frascati, Frascati, Italy

Dr. Ivan Spassovsky  
ENEA FRASCATI CENTER, Frascati, Italy

---

### Deadline for manuscript submissions

closed (31 October 2022)



## Applied Sciences

---

an Open Access Journal  
by MDPI

---

Impact Factor 2.5  
CiteScore 5.5



[mdpi.com/si/104796](https://mdpi.com/si/104796)

*Applied Sciences*  
Editorial Office  
MDPI, Grosspeteranlage 5  
4052 Basel, Switzerland  
Tel: +41 61 683 77 34  
[applsci@mdpi.com](mailto:applsci@mdpi.com)

[mdpi.com/journal/applsci](https://mdpi.com/journal/applsci)





# Applied Sciences

---

an Open Access Journal  
by MDPI

---

Impact Factor 2.5  
CiteScore 5.5



[mdpi.com/journal/  
applsci](https://mdpi.com/journal/applsci)



## About the Journal

### Message from the Editor-in-Chief

As the world of science becomes ever more specialized, researchers may lose themselves in the deep forest of the ever increasing number of subfields being created. This open access journal Applied Sciences has been started to link these subfields, so researchers can cut through the forest and see the surrounding, or quite distant fields and subfields to help develop his/her own research even further with the aid of this multi-dimensional network.

---

### Editor-in-Chief

Prof. Dr. Giulio Nicola Cerullo  
Dipartimento di Fisica, Politecnico di Milano, Piazza L. da Vinci 32,  
20133 Milano, Italy

---

### Author Benefits

#### Open Access:

free for readers, with article processing charges (APC) paid by authors or their institutions.

#### High Visibility:

indexed within Scopus, SCIE (Web of Science), Ei Compendex, Inspec, CAPlus / SciFinder, and other databases.

#### Journal Rank:

JCR - Q2 (Engineering, Multidisciplinary) / CiteScore - Q1 (General Engineering )