Special Issue

Coating Materials and Surface Treatments for Applications in Particle Accelerators

Message from the Guest Editor

Future particle accelerators demand very high beam intensities and energies, which for circular machines have the consequence of a very strong production of synchrotron radiation, among other issues. Such radiation hitting the beam vacuum chamber can cause several unwanted effects such as heat load on accelerator walls, and photon-stimulated desorption and production of primary and secondary electrons. All these effects influence beam dynamics and may lead to uncontrolled beam instabilities, such as the electron cloud effect. Studies of the properties of material surfaces are therefore a very important topic in particle accelerators. This Special Issue of *Coatings* will cover the latest research on the coating materials used in the vacuum chambers of future particle accelerators. In particular, the topics of interest include but are not limited to:

- Measurement of surface impedance;
- Primary and secondary electron yields;
- Reflectivity;
- Coating techniques;
- Laser ablation surface engineering (LASE).

Guest Editor

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About the Journal

Message from the Editorial Board

Now more than ever, research is asked to deliver knowledge and technologies to solve the major challenges faced by our society. The development of new materials and devices for (without the ambition to be exhaustive) energy, health and food technology, together with the need for establishing processes that reduce the impact on critical resources and the environment, is indeed in the spotlight of most contemporary research. Surface science and engineering play a key role in this regard, with an incredible potential in delivering new and deep scientific understanding and technical solutions essential to solve most of the major societal challenges.
Coatings is a well-established, peerreviewed, online journal dedicated to the vibrant field of surface science and engineering. Coatings publishes original research articles that report cutting-edge results and review papers that make the point on the hottest research topics.

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