Special Issue

Recent Advances in Thermoelectric Materials and Coatings: Structures, Properties and Emerging Applications

Message from the Guest Editor

This Special Issue focuses on the structure and property interplay between TE materials and coatings, highlighting innovations in coating technologies that enhance material stability, reduce thermal and electrical losses, and enable high-performance applications in energy harvesting and temperature sensing. Submissions that explore the synthesis and characterization of advanced coating materials and applications of novel coating techniques are highly encouraged. Topics of interest include, but are not limited to:

- Design of advanced coating materials to suppress oxidation and sublimation, minimize heat loss, and prevent short-circuiting with suitable mechanical properties;
- Exploration of novel processing techniques for coatings: nanocasting, vapor deposition, and liquid phase deposition or cost-effective approaches, such as enamel coating process;
- Characterization and analysis of the structure and property interplays between TE materials and coatings, such as interface phonon scattering and quantum confinement effects.
- Application of coating materials to enhance the longevity and corrosion resistance of TE devices under high-temperature and other harsh environments.

Guest Editor

Dr. Zhi Li

Department of Materials Science and Engineering, Northwestern University, Evanston, IL 60208, USA

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Coatings
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
coatings@mdpi.com

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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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Dr. Emerson Coy
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