

Special Issue

Defects, Stresses and Cracks in Thermal Barrier Coatings

Message from the Guest Editors

In recent years, the research on TBC (Thermal Barrier Coatings) technology has led to developments of new materials, processes, structures, and characterisation and simulation methods. Examples of these new technologies include rare earth-doped ceramic coatings that are more resistant to sintering, PS-PVD, and SPS processes, double ceramic layer coating structures, TBCs with fabricated vertical cracks, etc. The research on defects, stresses, and cracks in the new TBCs will underpin the understanding and improvement of these promising technologies. This Special Issue will serve as a forum for communication and dissemination of recent research on defects, stresses, and cracks in TBCs. It will cover but be not limited to the following topics:

- Detection, characterisation, and mitigation of TBC defects;
- Measurement and prediction of TBC stresses;
- Crack initiation and growth in TBCs;
- Experiments and simulations on TBC stresses/crack-related oxidation, sintering, erosion, CMAS corrosion, etc.;
- Failure mechanisms of TBCs;
- TBC life prediction models.

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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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