Special Issue

Arc-Sprayed Metallic Coatings

Message from the Guest Editor

Although wire arc spraying first came into use 100 years ago, it is still widely applied in workshops and on construction sites all over the world with no alteration to its original general principle: the melting of metal-based wire feedstock by an electric arc and the subsequent spraying of this melt by compressed gas. The use of localized, high arc energy and the lack of necessary fuel gases make conventional wire arc spraying a cost-efficient, easy-to-handle process with the highest deposition rates amongst the thermal spray family processes. Therefore, wire arc spraying was, and still is, a common process of choice for buffer layers, large-area coatings, and on-site applications. These challenges of wire arc spraying have been a focus in recent years, due to the optimization of torch designs and adapted spray parameters through improved current sources and new process simulation possibilities, which brought coating quality into regions of high-velocity spray processes.

Guest Editor

Dr. Thomas Grund

Materials and Surface Engineering Group, Institute of Materials Science and Engineering, Chemnitz University of Technology, 09107 Chemnitz, Germany

Deadline for manuscript submissions

closed (30 June 2020)

Metals

an Open Access Journal by MDPI

Impact Factor 2.5
CiteScore 5.3

mdpi.com/si/32643

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

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Metallic materials play a vital role in the economic life of modern societies; contributions are sought on fresh developments that enhance our understanding of the fundamental aspects related to the relationships between processing, properties and microstructure – disciplines in the metallurgical field ranging from processing, mechanical behavior, phase transitions and microstructural evolution, nanostructures, as well as unique metallic properties – inspire general and scholarly interest among the scientific community.

Editor-in-Chief

Prof. Dr. Yong Zhang
Beijing Advanced Innovation Center of Materials Genome Engineering, State Key Laboratory for Advanced Metals and Materials, University of Science and Technology Beijing, 30 Xueyuan Road, Beijing 100083, China

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