Special Issue

Mechanical Properties of Metal Alloy Surface: Measurement and Evaluation

Message from the Guest Editors

The knowledge of the local yield strength and stress-strain behavior of the surface treated steels, due to mechanical, thermal or thermo-chemical surface treatments, such as, e.g., laser beam machining, laser peening, shot-peening, quenching and nitriding, has a great relevance in several areas of mechanical engineering science. For example, to deeply study problems of fatigue, contact fatigue or wear, valid behavior laws for the surface-treated material layers are needed. Since in those damage mechanisms the initial damage occurs, in general, at surface near regions, materials science and surface engineering advise the use of structural ductile steels, having its surface modified by coatings and/or surface treatments. This special issue focuses on presenting the latest research on the mechanical properties of alloy surface, his measurement and evaluation, which imply development of new materials, new processes and new treatments to be applied to these surface layers.

Guest Editors

Prof. Dr. Luís Coelho

Department of Mechanical Engineering, Polytechnic Institute of Leiria, 2411-901 Leiria, Portugal

Dr. Joao Nobre

Department of Physics, University of Coimbra, Rua Larga à Universidade, 3004-516 Coimbra, Portugal

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

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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

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