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Analytical Modeling of Advanced Manufacturing Processes

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Deadline for manuscript submissions:
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Message from the Guest Editor

The control of machining is critical to the quality of the final product, while the evaluation of advanced manufacturing processes becomes more challenging. In situ parameters including force, temperature, and tool wear indicate whether the machining is conducted within an allowable range of equipment. Force and temperature in shear zone are the results of both mechanical and thermal loads. Moreover, tool wear describes the gradual failure of cutting tools due to regular operation. Residual stress and surface roughness reflect the machining process and are directly related to the fatigue performance and surface quality of the product. Surface roughness characterizes the surface texture in terms of deviations.

To date, most related studies have been carried out using numerical analysis or experimental investigation. This includes forward analysis by predicting machining parameters (force, temperature, etc.) under given conditions and inverse analysis by predicting machining conditions under desired parameters.

For this Special Issue in *Metals*, we welcome reviews and articles regarding analytical modeling of various parameters in advanced manufacturing processes.

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Message from the Editorial Board

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.

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