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Difficult-to-Process Material: Structure, Properties and Cutting

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Deadline for manuscript submissions:
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Message from the Guest Editors

Dear Colleagues,

Mechanical machining or cutting, as a subtractive manufacturing operation, is one of the most widely used manufacturing processes. Although some emerging manufacturing processes, such as additive manufacturing, have advanced beyond rapid prototyping to the manufacture of structural and functional components, the dominant role of cutting is still irreplaceable owing to its flexibility, good surface quality, high material removal rate, and the capability to machine nearly all types of materials. Material properties generally have contrary relationships with their machinability, and those materials with excellent thermal, physical, or mechanical properties are always difficult to process. With the rapid development of advanced engineering materials, new challenges have emerged in the field of cutting. The development of cutting of difficult-to-process materials will be aimed at improvements in production efficiency and product quality and at cost reduction. Revealing the “structure–property–cutting performance” relationships is pivotal to achieve a high production rate and surface quality...

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Editor-in-Chief

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Message from the Editor-in-Chief

Symmetry is ultimately the most important concept in natural sciences. It is not surprising then that very basic and fundamental research achievements are related to symmetry. For instance, the Nobel Prize in Physics 1979 (Glashow, Salam, Weinberg) was received for a unified symmetry description of electromagnetic and weak interactions, while the Nobel Prize in Physics 2008 (Nambu, Kobayashi, Maskawa) was received for the discovery of the mechanism of spontaneous breaking of symmetry, including CP symmetry. Our journal is named *Symmetry* and it manifests its fundamental role in nature.

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