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Novel Approaches in the Design, Simulation, and Manufacturing for Processes and Systems

Guest Editors:

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Message from the Guest Editors

Dear Colleagues,

The application of novel approaches in the design, simulation, and manufacturing of engineering products ensures the effectiveness of manufacturing systems. Modeling the materials' structure leads to the production of a predetermined set of their properties and ensures the designed parts' reliability. This modeling is essential for cutting tools, fixtures and tooling, friction pairs, highly loaded parts of machines and equipment, etc. Implementation of the abovementioned issues must ensure the functionality and assigned operating parameters of the designed parts and units in terms of wear resistance, stress–strain modes and dynamic behavior, loading capacity, etc. Advanced material processing approaches can be applied (plasma deposition, electro spark, chemical-thermocycling treatment, strengthening, etc.). Additionally, novel approaches can be implemented in designing advanced materials (polymers, composites, ceramics, nanomaterials, etc.). At the design stage of materials, it is essential to predict the functional, rheological, and tribological properties using numerical simulation and experimental studies.

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Message from the Editor-in-Chief

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