



Design and Optimization of Rotor Dynamics in Applications

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Message from the Guest Editors

In recent years, we have followed the progress of the research area of future turbomachines in power generation and transport, including applications such as steam and gas turbines, hydro- and wind turbines, energy storage flywheels, aircraft engines, turbochargers, turbo compressors and more. Developments are driven by problems and trends in oil-free technology, electric drive, downsizing, high speed and stability range, power loss reduction, recyclable materials, emission reduction, fuel consumption and further environmental concerns.

In some aspects of turbomachinery rotor dynamic design, the methods are mature and the tools advanced enough to provide boundary design. Other aspects require the integration of edge tools in simulation and optimization so as to establish the future design instructions of turbomachines operating beyond today's limitations.

Topics include but are not limited to new rotor dynamic concepts on turbomachines, dynamic design optimization of turbomachines utilizing modern methods, nonlinear rotor dynamics, oil-free and novel bearing elements, digital twins of turbomachines, and advanced methods and principles for stability and control.





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Message from the Editor-in-Chief

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