






# New Advances in Fluid–Structure Interaction

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Fluid–structure interactions (FSI) play a crucial role in the design, construction, service and maintenance of many engineering applications, e.g., aircraft, towers, pipes, offshore platforms and long-span bridges. The old Tacoma Narrows Bridge (1940) is probably one of the most infamous examples of serious accidents due to the action of FSI. Aircraft wings and wind-turbine blades can break because of FSI-induced oscillations. To alleviate or eliminate these unfavorable effects, FSI must be dealt with in ocean, coastal, offshore and marine engineering to design safe and sustainable engineering structures. In addition, the act of wind on plants and its resultant wind-induced motions are an example of FSI in nature.

To meet the objectives of progress and innovation in FSI in various scenarios of engineering applications and control schemes, this book includes 15 research studies and collects the most recent and cutting-edge developments on these relevant issues. The topics cover different areas associated with FSI, including wind loads [1–3], flow control [4–9], energy harvesting [10], buffeting and flutter [11,12], complex flow characteristics [13], train–bridge interactions [14] and the application of neural networks in related fields [15]. In summary, these complementary contributions in this publication provide a volume of recent knowledge in the growing field of FSI.

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