

Special Issue

Erosion-Corrosion and Stress Corrosion Characteristics of Hydraulic and Marine Structures

Message from the Guest Editors

The environment in which hydraulic and marine structures (such as gate, pipe, ship, platform, etc.) are located is a typical fluid–solid coupling system. In areas with rapid flow transitions, cavitation might cause pitting damage, destroying the structural integrity. At the same time, the water flow and the mixed solid impurities will cause erosion and wear to the structure, and the durability of key parts will be reduced. On the other hand, in a corrosive fluid environment, electrochemical corrosion is inevitable, which could induce the degradation of structures. Furthermore, the synergy of mechanical stress and corrosion (including but not limited to stress corrosion, erosion–corrosion, tribo-corrosion, and corrosion fatigue) could lead to premature failure of hydraulic and marine structures. As a result, exploring the dynamic response under the action of fluids, and detecting the material damage characteristics of structures under the coupling of multiple loads (hydrodynamics, corrosion, wear, etc.) is significant for providing guidance and support for strength assessment and remaining life prediction of hydraulic metal structures and marine structures.

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Friction, wear, and lubrication are tribological phenomena that govern the behavior of interacting surfaces in a wide range of machine components. Understanding the physical and chemical nature of these phenomena is critical to achieving long component lifetime and economical operation. Research in the field of tribology is highly interdisciplinary, and encompasses the fields of physics, chemistry, engineering, and mathematical modeling. *Lubricants* invites contributions on new advances in all areas of tribology for publication as peer-reviewed research articles, reviews of current research, letters, and communications. We are committed to providing timely reviews of all articles submitted. Please consider sharing your work with the scientific community through publication in *Lubricants*.

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