



Effects of Cryogenic Treatment on the Corrosion and Materials Degradation

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Deadline for manuscript
submissions:

30 June 2025

Message from the Guest Editors

Cryogenic treatment has become an important process in recent years, helping to tailor the microstructure and modify the final properties of materials; this includes the corrosion resistance, tribocorrosion resistance, wear resistance, fatigue resistance and surface properties. Cryogenic treatment is a treatment that affects both the surface and the bulk of the material at the same time, which is an advantage over other conventional treatments. By changing the microstructure and final properties of materials, cryogenic treatment can not only extend their life, but also the final component or tool, resulting in lower maintenance and processing costs. The application of cryogenic treatment can be found in medicine and implants, in the music industry for enhancing the sound of stringed and brass instruments, and in the automotive industry, oil and gas industry, mining industry, tool industry, electronics, robotics and many other conventional and emerging technologies. Cryogenic treatment can be applied to a wide variety of materials, from metallic (ferrous and non-ferrous alloys) to non-metallic, and to polymers, ceramics and composites.

