Haynes Technical Papers at MTI 2026

Our alloy experts will be presenting their technical papers at Global Solutions Symposium in Charlotte, North Carolina, February 23rd-25th, 2026. Join them as they present their technical papers during the technical program of the conference.

Tuesday, February 24th 2:15-2:45 PM
Symphony Ballroom II & III

Presenter: Bingtao Li

Authors: Bingtao Li, Lee M. Pike, and Vinay Deodeshmukh

Presentation Title: High-temperature Corrosion Resistance of Commercial Wrought Alloys in Extreme Environments

Presentation Details: High-temperature corrosion poses significant challenges to high-temperature wrought alloys in process industries because of corrosion degradation, especially in extreme environments. Although a lot of high temperature corrosion data of high-temperature wrought alloys has been generated from lab testing and industry practices, the challenges always exist as the corrosion behaviors of an alloy often vary with operation conditions, such as an alloy with satisfied corrosion resistance in one process may not be suitable to another process. For instance, the operation temperature of ammonia synthesis process is below 1000°F, in which Fe-base alloys are widely used. However, the ammonia cracking process exposes alloys to much higher temperatures, such as 1300°F and above, in which Fe-base alloys suffer extreme nitridation attack and even many Ni-base alloys cannot provide sufficient nitridation resistance. This presentation illustrates high-temperature corrosion resistant behaviors of the widely used wrought Ni-base alloys, including HAYNES® 214®, 233®, 230®, 282®, 244®, HR-224®, HR-235®, HR-160®, 625, 617, etc. alloys, in extreme environments, especially providing the latest data and experience in resisting high-temperature oxidation, sulfidation, metal dusting, and nitridation. It will provide insights and understanding of high-temperature corrosion mechanisms, alloy composition effects, and alloy performance to assist alloy selection and evaluation in process industries.

Wednesday, February 25th 3:30 - 4:15 PM
Symphony Ballroom V & VI

Presenter: Brandon Furr

Authors: Brandon Furr, Ling Chen, Ramanathan Krishnamurthy, and Paul Crook, Haynes International

Presentation Title: Wear & Corrosion Resistant Cobalt Alloys

Presentation Details: The purpose of this presentation is to describe the metallurgy, wear, and corrosion characteristics of cobalt-based alloys used in the chemical process and oil/gas industries. These cobalt-based alloys fall into two categories, those which contain chromium, tungsten, and significant quantities of carbon (to generate carbides within their microstructures), and those which contain chromium, molybdenum (and possibly nickel) together with much lower carbon contents. There are several forms of wear; these include low-stress abrasion, high-stress abrasion, galling, high-speed metal-to-metal sliding, solid particle erosion, liquid-droplet erosion, slurry erosion, and cavitation erosion. These forms of wear will be discussed, along with the most beneficial alloy compositions and microstructures for each form.

Wear and corrosion data will be provided for the cobalt-based alloys relative to the corrosion-resistant nickel-based alloys, and the stainless steels.
Known applications of the cobalt-based alloys within the chemical process and oil/gas industries will be provided.