Haynes Technical Papers at AMPP 2026

Our alloy experts will be presenting their technical papers at AMPP Annual Conference +Expo in Houston, Texas, March 15-19th, 2026. Join them as they present their technical papers during the technical program of the conference.

Thursday, March 19th 9:30 - 10:00AM
371 AB

Presenter: Ling Chen, PhD

Authors: Ling Chen, Ajit Mishra, Javier Guerrero, Vinay Deodeshmukh

Presentation Title: Ni-base corrosion resistant alloys (CRA) performance in high concentrated acidic brine solutions

Presentation Details: High concentrated brine solution is widely used in various industries, such as chlor-alkali cells to produce chlorine, the drilling fluids for Oil & Gas wells as well as in the geothermal industry, agricultural product process, wastewater treatment, preserving foods and deicing applications. Materials selection on preventing pitting and general corrosion as well as stress corrosion cracking (SCC) when exposed to concentrated brine solution is important. In this paper, Ni-Mo (N10675) alloy and Ni-Cr-Mo alloys (N10276, N06022, N10362 and Nn6200) were evaluated in acidic 20%NaCl solutions with low PH (≤1) at temperature range from 110oC to 150oC. The as-welded N10362 alloy has shown excellent corrosion performance in those low PH and high concentrated saline solutions. Mo-rich oxide films were observed on all alloys surface when PH=0.

Another study performed in strong oxidizing environment of acidic 5%NaCl solution saturated with wet Cl2 has shown alloy N06200 and N10362 outperformed N10276 alloy. The N06200 and N10362 coupons are in field testing for piping materials of chlorine production.

Thursday, March 19th 9:30 - 10:00 AM
361 DE

Presenter: Bingtao Li

Authors: Bingtao Li, Ramanathan Krishnamurthy, Lee M. Pike

Presentation Title: Pre-oxidation Heat-Treatment on Ni-base Alumina-forming Alloys to Enhance their High-Temperature Corrosion Resistance

Presentation Details: Most high-temperature alloys rely on the formation of a protective oxide scale, typically chromium oxide (chromia) or aluminum oxide (alumina), to resist high-temperature oxidation /corrosion. Alumina scales could provide superior protection to high temperature corrosion compared to chromia scales. For this purpose, it is critical to establish a protective alumina scale promptly when put into service. This can be challenging, especially in harsh environments, for some nominally alumina-forming alloys due to the slow kinetics of alumina scale formation. Pre-oxidation heat-treatments can help establish this protective alumina scale, and hence, ensure the expected superior high-temperature corrosion resistance of alumina-forming alloys. This paper presents results from pre-oxidation heat-treatment studies on Ni-base alumina-forming alloys, N07214, NiCoCrMoAl, and NiFeCrAl. The thickness and the microstructure of the alumina scales formed under different conditions were characterized to enable optimization of the pre-oxidation heat-treatment. High-temperature oxidation and corrosion tests were performed to evaluate the effectiveness of these pre-oxidation treatments in forming corrosion resistant alumina scales, and high-temperature corrosion test results and analyses are presented for alumina-forming alloys with/without pre-oxidation treatment and chromia-forming alloys.