NOTICE OF CHANGE OF NAME AND MARK TO CHEMEON:

This document was published by Metalast International, LLC, before 2013. In 2013, CHEMEON Surface Technology, formerly Metalast Surface Technology, acquired all assets of Metalast International, LLC, and is the sole source of products and services (i) marketed as Metalast prior to June 10, 2015, and (ii) since then have been marketed under the CHEMEON mark. CHEMEON is not affiliated with David M. Semas.
Nanocrystalline Coatings Provide Hard Chrome Alternative

Implementation of ESTCP-demonstrated electrodeposited nanocrystalline cobalt-phosphorus (nCoP) coatings on military aircraft will eliminate environmental and worker safety concerns associated with hexavalent chromium used in DoD plating operations, and reduce operational costs.

Replacement of hard chromium (Cr) plating in aircraft manufacturing activities and maintenance depots is a high priority for the DoD. Hard chrome plating is a critical process that is used extensively within military aircraft maintenance depots for applying wear and/or corrosion resistant coatings to various aircraft components and for general re-build of worn or corroded parts during repair and overhaul. However, hard chrome plating baths contain hexavalent chromium, a known carcinogen. Wastes generated from these plating operations must abide by strict EPA emissions standards and OSHA permissible exposure limits (PELs). The operational costs to comply with these rules and the increased turnaround times for processing of components require DoD to find an environmentally benign alternative to hard chrome.

Mr. Ruben Prado and Mr. John Benfer of NAVAIR Jacksonville, together with their team, demonstrated that nCoP meets the majority of acceptance criteria for coating quality, adhesion, fatigue, corrosion, hydrogen embbrittlement, fluid compatibility, wear, and impact testing for a wide variety of applications. Based on testing to date, the team anticipates that nCoP will be widely specified per MIL-DTL-32502 as a hard chrome alternative.
For this significant work, Mr. Prado, Mr. Benfer, and their project team received the 2014 ESTCP Project-of-the-Year Award for Weapons Systems and Platforms. **Project Overview**

**Project Team**

NAVAIR Jacksonville  
Mr. Ruben Prado  
Mr. Jack Benfer  
NAVAIR Patuxent River  
Mr. Steve Brown  
Mr. Craig Matzdorf  
Mr. Michael Firth, NAVAIR Lakehurst  
Mr. Robert Kestler, NAVAIR Cherry Point  
Ms. Denise M. Aylor, NSWCCD  
NAVAIR Jacksonville  
Mr. Richard Polinsky  
Ms. Luzmarie Youngers  
Mr. Peter Sheridan  
Ms. Mikaleen Morrell  
CNATRA Det Meridian  
Mr. Sean Whitney  
Mr. Hector Perez  
Mr. Stephen Gaydos, Boeing Research and Development  
Mr. Jerry Curran, NASA Corrosion Technology Laboratory  
Dr. Keith Legg, Rowan Technology Group  
Mr. Neil Mahalanobis, Integran Technologies, Inc.

Information provided courtesy of https://www.serdp-estcp.org

Posted by Ted Kelly at 7:48 PM