Dr. Thorsten Stoltenhoff, Linde Advanced Material Technologies

Title: "ExoGard^{TM} – Recent Achievements in Hard Chrome Substitution"

Abstract:
Since the entry into force of the EU Chemicals Regulation 1907/2006 - REACH on 1 June 2007 at the latest, many industrial sectors have been working increasingly on the substitution of electrodeposited chromium coatings, as the by-product – hexavalent chromium – is one of the prohibited substances. The substitution of g/a chrome coatings poses major challenges for both manufacturers and users due to their widespread use for decorative and technical purposes.

Many attempts to replace hard chrome coatings with Thermal Spray coatings have failed, as it was tried at the same time to achieve a significant improvement in the coating properties. Finally, the production costs of the resulting TS coatings got simply too high. A most suitable coating system as hard chrome substitute should therefore provide good protection against mechanical wear paired with sufficient corrosion resistance at a lowest possible total coating thickness. In addition, the as-coated surface should require lowest mechanical post-processing only. The extent to which this can be achieved with known or new technologies of thermal spraying will be presented here.

Biography:

Dr. Thorsten Stoltenhoff
Linde Advanced Material Technologies
Associate Director Technology Europe

Thorsten received his MSc in Mechanical Engineering with a major in Fluid Dynamics at the Helmut-Schmidt-University in Hamburg, Germany in 1996, during his 10 years service in the German Federal Armed Forces.

Subsequently, Thorsten completed his doctoral thesis in the field of cold spraying at the Institute of Material Science of the HSU in 2004, followed by his first industrial position at Praxair Surface Technologies GmbH in Ratingen, Germany, as head of process and application development. All in all, Thorsten can look back on more than 25 years of experience in the field of thermal spraying and cold spraying.