Scott Wilson, Oerlikon Metco

Title: "Advanced Coatings for Improved Sustainability in Aviation."

Abstract:
The Aviation industry is embracing the challenge of making air travel more sustainable with a key drive towards reductions in Specific Fuel Consumption (SFC) and eliminating unwanted emissions. To meet these goals, engine OEMs need and use advanced coating technologies on their engine components to enable the following:

- Less fuel wastage, especially for transient engine conditions such as take-off and landing
- Robust performance in complex cyclic thermal and environmental conditions
- Fewer maintenance intervals, with shorter engine overhaul turnaround times.

A snapshot of published Commercial Aero Engine fleet gas and other regulated emissions ratings as a function of Engine Thrust, and Engine Pressure Ratio (EPR) is presented, with insights on key challenges faced to lower these. Examples will be given on how existing and new coating technologies from Oerlikon have helped OEMs improve engine SFC and lower emissions. A focus on engine sealing technologies provided by thermally sprayed abradable (clearance control) coatings is made, together with some examples of other coating systems used on advanced aero engine components, which are subjected to increasingly higher temperatures and complex environmental exposure attack.

Biography:
Scott Wilson is Global Product Manager for Abradable (clearance control) coatings at Oerlikon Metco, Switzerland. After completing his PhD in materials engineering at the University of Cape Town, he held a postdoc and research fellowship position at the University of Windsor, Canada, followed by a research officer position in the Tribology group at the National Research Council of Canada, in Vancouver. He then worked as Project Leader at Sulzer Innotec in Winterthur, Switzerland from 2001 to 2008, responsible mostly for abradable testing and tribology programs. In 2009 he took up a Competence Leader R&D position at Metco and then migrated over to application & product management for Oerlikon from 2017.