2nd CIRP Conference on Surface Integrity

Recent progress in surface integrity assessment of

machined surfaces

Presenting Author: Dr. Rachid M’Saoubi

*R&D Seco Tools AB, SE-73782 Fagersta, Sweden*

Abstract

The constant need for improved surface integrity and enhanced functional performance of manufactured components has long acted as a driving force in the development of new production methods and high performance manufacturing technologies. Today, new capabilities in machining processes and high precision engineering have enabled the miniaturization of component manufacture. This in turn has required the use of advanced surface characterization methods to assess the nature of the alterations produced in very thin layers of the machined surface. Significant progress has been made in evaluating surface integrity in machined components over the past decades. Due to the availability of extensive analysis and recent reviews on surface integrity, this presentation will focus on selected recent applications of characterization methods, quantitative analysis of residual stress state, microstructure alteration and deformation characteristics of surface and subsurface machined layers.