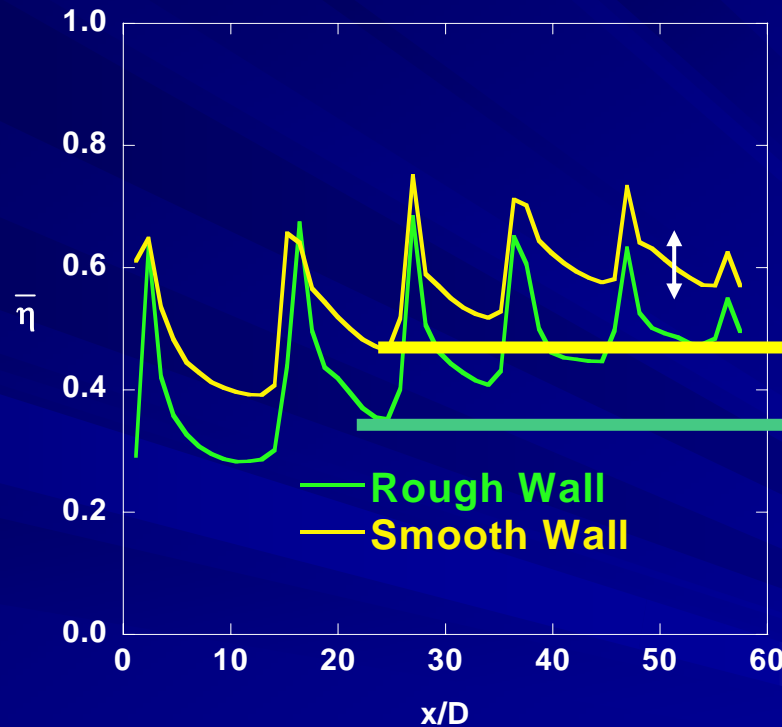
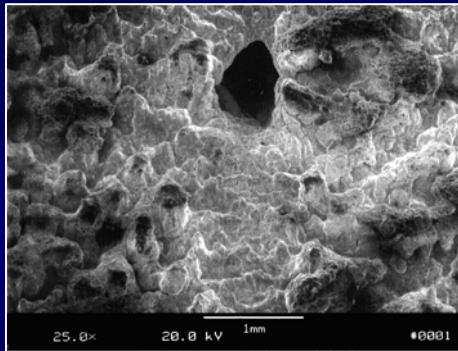


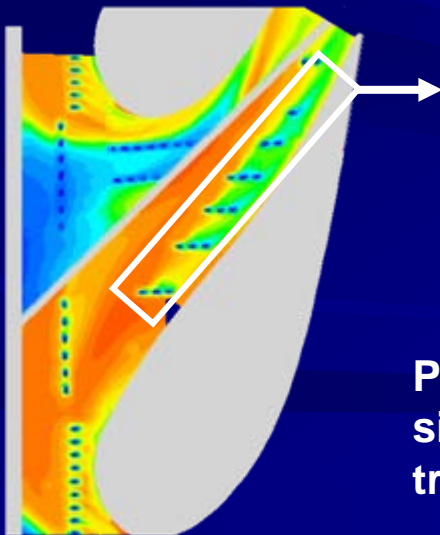
# Evaluation of Turbine Vanes and Endwalls with Realistic Surface Conditions

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#110

Picture of cooling hole with surface roughness for actual operating conditions



Reduction in cooling results in more than a 2X reduction in life



Project showed the effect of surface roughness levels from simulations of engine operating conditions on airfoil and endwall heat transfer will be to reduce cooling effectiveness and airfoil life

GE, Pratt & Whitney, and Rolls-Royce have participated in this project