

Pulsed Film Cooling on a Turbine Blade Leading Edge

Filesize: 3.24 MB

Reviews

This publication is wonderful. It really is rally interesting throgh reading period of time. I am just very easily will get a delight of reading a published book. (Roma Little)

PULSED FILM COOLING ON A TURBINE BLADE LEADING EDGE



DOWNLOAD PDF

Biblioscholar Okt 2012, 2012. Taschenbuch. Book Condition: Neu. 246x189x17 mm. This item is printed on demand - Print on Demand Neuware -Unsteadiness in gas turbine film cooling jets may arise due to inherent unsteadiness of the flow through an engine or may be induced as a means of flow control. The traditional technique used to evaluate the performance of a steady film cooling scheme is demonstrated to be insufficient for use with unsteady film cooling and is modified to account for the cross coupling of the time dependent adiabatic effectiveness and heat transfer coefficient. The addition of a single term to the traditional steady form of the net heat flux reduction equation with time averaged quantities accounts for the unsteady effects. An experimental technique to account for the influence of the new term was devised and used to measure the influence of a pulsating jet on the net heat flux in the leading edge region of a turbine blade. High spatial resolution data was acquired in the nearhole region using infrared thermography coupled with experimental techniques that allowed application of the appropriate thermal boundary conditions immediately adjacent to the film cooling hole. The turbine blade leading edge was simulated by a half cylinder in cross flow with a blunt afterbody. The film cooling geometry consisted of a coolant hole located 21.5- from the leading edge, angled 20- to the surface and 90- from the streamwise direction. Investigated parameters include pulsation frequency, duty cycle, and waveform shape. Separate experiments were conducted in a water channel to provide visualization of the unsteady coolant propagation behavior. Further insight into the flow physics was obtained through computational simulations of the experimental apparatus. The computational results afforded time resolved flow field and net heat flux reduction data unobtainable with the experimental techniques. A technique...

Read Pulsed Film Cooling on a Turbine Blade Leading Edge Online
Download PDF Pulsed Film Cooling on a Turbine Blade Leading Edge

You May Also Like

\rightarrow

What is in My Net? (Pink B) NF

Pearson Education Limited. Book Condition: New. This title is part of Pearson's Bug Club - the first whole-school reading programme that joins books and an online reading world to teach today's children to read. In... Read Document »

\rightarrow
1

Bully, the Bullied, and the Not-So Innocent Bystander: From Preschool to High School and Beyond: Breaking the Cycle of Violence and Creating More Deeply Caring Communities

HarperCollins Publishers Inc, United States, 2016. Paperback. Book Condition: New. Reprint. 203 x 135 mm. Language: English . Brand New Book. An international bestseller, Barbara Coloroso s groundbreaking and trusted guide on bullying-including cyberbullyingarms parents...

Read Document »

\rightarrow	

Some of My Best Friends Are Books : Guiding Gifted Readers from Preschool to High School Book Condition: Brand New. Book Condition: Brand New. Read Document »

		2
)	

The Preschool Inclusion Toolbox: How to Build and Lead a High-Quality Program Brookes Publishing Co, United States, 2015. Paperback. Book Condition: New. 274 x 213 mm. Language: English . Brand New Book. Filled with tips, tools, and strategies, this book is the comprehensive, practical toolbox preschool administrators... Read Document »

\rightarrow	

A Smarter Way to Learn JavaScript: The New Approach That Uses Technology to Cut Your Effort in Half

Createspace, United States, 2014. Paperback. Book Condition: New. 251 x 178 mm. Language: English . Brand New Book ***** Print on Demand *****. The ultimate learn-by-doing approachWritten for beginners, useful for experienced developers who want to... Read Document »