

# Journal of Turbomachinery

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## Research Papers

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### Enhancement of Impingement Cooling in a High Cross Flow Channel Using Shaped Impingement Cooling Holes

Andrew C. Chambers, David R. H. Gillespie, Peter T. Ireland and Robert Kingston

*J. Turbomach.* 2009;132(2):021001-021001-8. doi:10.1115/1.3140282.

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### Detailed Heat Transfer Measurements in a Model of an Integrally Cast Cooling Passage

Ioannis Ieronymidis, David R. H. Gillespie, Peter T. Ireland and Robert Kingston

*J. Turbomach.* 2009;132(2):021002-021002-9. doi:10.1115/1.3140283.

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### Experimental Reduction of Transonic Fan Forced Response by Inlet Guide Vane Flow Control

S. Todd Bailie, Wing F. Ng and William W. Copenhaver

*J. Turbomach.* 2009;132(2):021003-021003-8. doi:10.1115/1.3140823.

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### A Review of Surface Roughness Effects in Gas Turbines

J. P. Bons

*J. Turbomach.* 2010;132(2):021004-021004-16. doi:10.1115/1.3066315.

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### Predictions of Turbulent Flow for the Impeller of a NASA Low-Speed Centrifugal Compressor

K. M. Guleren, I. Afgan and A. Turan

*J. Turbomach.* 2010;132(2):021005-021005-8. doi:10.1115/1.3140824.

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### Aerothermal Impact of Stator-Rim Purge Flow and Rotor-Platform Film Cooling on a Transonic Turbine Stage

M. Pau, G. Paniagua, D. Delhayé, A. de la Loma and P. Ginibre

*J. Turbomach.* 2010;132(2):021006-021006-12. doi:10.1115/1.3142859.

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### Improving Efficiency of a High Work Turbine Using Nonaxisymmetric Endwalls — Part I: Endwall Design and Performance

T. Germain, M. Nagel, I. Raab, P. Schüpbach, R. S. Abhari and M. Rose

*J. Turbomach.* 2010;132(2):021007-021007-9. doi:10.1115/1.3106706.

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### Improving Efficiency of a High Work Turbine Using Nonaxisymmetric Endwalls —Part II: Time-Resolved Flow Physics

P. Schüpbach, R. S. Abhari, M. G. Rose, T. Germain, I. Raab and J. Gier

*J. Turbomach.* 2010;132(2):021008-021008-10. doi:10.1115/1.3103926.

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## Effects of Compact Radial-Vaned Air Separators on Stalling Characteristics of an Axial-Flow Fan

Nobuyuki Yamaguchi, Masayuki Ogata and Yohei Kato

*J. Turbomach.* 2010;132(2):021009-021009-8. doi:10.1115/1.3104613.

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## Particle Image Velocity Investigation of a High Speed Centrifugal Compressor Diffuser: Spanwise and Loading Variations

Beni Cukurel, Patrick B. Lawless and Sanford Fleeter

*J. Turbomach.* 2010;132(2):021010-021010-9. doi:10.1115/1.3104616.

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## Adjoint Aerodynamic Design Optimization for Blades in Multistage Turbomachines—Part I: Methodology and Verification

D. X. Wang and L. He

*J. Turbomach.* 2010;132(2):021011-021011-14. doi:10.1115/1.3072498.

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## Adjoint Aerodynamic Design Optimization for Blades in Multistage Turbomachines—Part II: Validation and Application

D. X. Wang, L. He, Y. S. Li and R. G. Wells

*J. Turbomach.* 2010;132(2):021012-021012-11. doi:10.1115/1.3103928.

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## Design and Optimization of the Internal Cooling Channels of a High Pressure Turbine Blade—Part I: Methodology

Sergio Amaral, Tom Verstraete, René Van den Braembussche and Tony Arts

*J. Turbomach.* 2010;132(2):021013-021013-7. doi:10.1115/1.3104614.

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## Design and Optimization of the Internal Cooling Channels of a High Pressure Turbine Blade—Part II: Optimization

Tom Verstraete, Sergio Amaral, René Van den Braembussche and Tony Arts

*J. Turbomach.* 2010;132(2):021014-021014-9. doi:10.1115/1.3104615.

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## Improvement of Stalling Characteristics of an Axial-Flow Fan by Radial-Vaned Air-Separators

Nobuyuki Yamaguchi, Masayuki Ogata and Yohei Kato

*J. Turbomach.* 2010;132(2):021015-021015-10. doi:10.1115/1.3104612.

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## Aerothermal Investigation of Tip Leakage Flow in a Film Cooled Industrial Turbine Rotor

S. K. Krishnababu, H. P. Hodson, G. D. Booth, G. D. Lock and W. N. Dawes

*J. Turbomach.* 2010;132(2):021016-021016-9. doi:10.1115/1.3144164.

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## Numerical Investigation on the Self-Induced Unsteadiness in Tip Leakage Flow for a Transonic Fan Rotor

Juan Du, Feng Lin, Hongwu Zhang and Jingyi Chen

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*J. Turbomach.* 2010;132(2):021017-021017-9. doi:10.1115/1.3145103.

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## Experiments and Computations on Large Tip Clearance Effects in a Linear Cascade

Richard Williams, David Gregory-Smith, Li He and Grant Ingram

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*J. Turbomach.* 2010;132(2):021018-021018-10. doi:10.1115/1.3104611.

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## Heat Transfer in Radially Rotating Pin-Fin Channel at High Rotation Numbers

Shyy Woei Chang, Tong-Miin Liou, Tsun Lirng Yang and Guo Fang Hong

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*J. Turbomach.* 2010;132(2):021019-021019-12. doi:10.1115/1.3147103.

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## Investigation of Sand Blocking Within Impingement and Film-Cooling Holes

N. D. Cardwell, K. A. Thole and S. W. Burd

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*J. Turbomach.* 2010;132(2):021020-021020-10. doi:10.1115/1.3106702.

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## Effects of Suction and Injection Purge-Flow on the Secondary Flow Structures of a High-Work Turbine

P. Schuepbach, R. S. Abhari, M. G. Rose, T. Germain, I. Raab and J. Gier

*J. Turbomach.* 2010;132(2):021021-021021-8. doi:10.1115/1.4000485.