

# Journal of Heat Transfer

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## Guest Editorial

### Foreword to the Special Issue on Radiative Heat Transfer

Sandip Mazumder and Brent W. Webb

*J. Heat*

*Transfer*. 2009;132(2):020301-  
020301-1.  
doi:10.1115/1.4000243.

**RESEARCH PAPERS:** Radiative  
Properties

### Infrared Radiative Properties of Heavily Doped Silicon at Room Temperature

S. Basu, B. J. Lee and Z. M. Zhang

*J. Heat*

*Transfer*. 2009;132(2):023301-  
023301-8.  
doi:10.1115/1.4000171.

Near-Field Radiation  
Calculated With an Improved

### Dielectric Function Model for Doped Silicon

S. Basu, B. J. Lee and Z. M. Zhang

*J. Heat*

*Transfer*. 2009;132(2):023302-  
023302-7.  
doi:10.1115/1.4000179.

A Quasidependent Scattering  
Radiative Properties Model for

### High Density Fiber Composites

Siu-Chun Lee

*J. Heat*

*Transfer*. 2009;132(2):023303-  
023303-8.  
doi:10.1115/1.4000186.

Experimental and  
Computational Characterization

### of High Heat Fluxes During Transient Blackbody Calibrations

Amanie N. Abdelmessih and Thomas J. Horn

*J. Heat*

*Transfer*. 2009;132(2):023304-  
023304-13.  
doi:10.1115/1.4000187.

Tomography-Based Heat and  
Mass Transfer Characterization

### of Reticulate Porous Ceramics for High-Temperature Processing

Sophia Haussener, Patrick Coray, Wojciech Lipiński, Peter Wyss and Aldo Steinfeld

*J. Heat*

*Transfer*. 2009;132(2):023305-  
023305-9.  
doi:10.1115/1.4000226.

Infrared Radiative Properties  
of Thin Polyethylene Coating

## Pigmented With Titanium Dioxide Particles

Mehdi Baneshi, Shigenao Maruyama and Atsuki Komiya

*J. Heat*

*Transfer.* 2009;132(2):023306-023306-12.  
doi:10.1115/1.4000235.

## A Narrow Band-Based Multiscale Multigroup Full-

## Spectrum k-Distribution Method for Radiative Transfer in Nonhomogeneous Gas-Soot Mixtures

Gopalendu Pal and Michael F. Modest

*J. Heat*

*Transfer.* 2009;132(2):023307-023307-9.  
doi:10.1115/1.4000236.

## Radiative Properties of Numerically Generated Fractal

## Soot Aggregates: The Importance of Configuration Averaging

Fengshan Liu and Gregory J. Smallwood

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*Transfer.* 2009;132(2):023308-023308-6.  
doi:10.1115/1.4000245.

## RESEARCH PAPERS: Solution Methods

## The Simplified-Fredholm Integral Equation Solver and Its Use in Thermal Radiation

K. G. Terry Hollands

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*Transfer.* 2009;132(2):023401-023401-6.  
doi:10.1115/1.4000183.

## Finite-Volume Formulation and Solution of the P3 Equations

## of Radiative Transfer on Unstructured Meshes

Mahesh Ravishankar, Sandip Mazumder and Ankan Kumar

*J. Heat*

*Transfer.* 2009;132(2):023402-023402-14.  
doi:10.1115/1.4000184.

## An Efficient Sparse Finite Element Solver for the

## Radiative Transfer Equation

Gisela Widmer

*J. Heat*

*Transfer.* 2009;132(2):023403-023403-7.  
doi:10.1115/1.4000190.

## A Finite Element Treatment of the Angular Dependency of

## the Even-Parity Equation of Radiative Transfer

R. Becker, R. Koch, H.-J. Bauer and M. F. Modest

*J. Heat*

*Transfer.* 2009;132(2):023404-023404-13.  
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## Radiative Transfer in

## Dispersed Media: Comparison Between Homogeneous Phase and Multiphase Approaches

Jaona Randrianalisoa and Dominique Baillis

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*Transfer.* 2009;132(2):023405-023405-11.  
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Spectral Module for Photon Monte Carlo Calculations in

## Hypersonic Nonequilibrium Radiation

Takashi Ozawa, Michael F. Modest and Deborah A. Levin

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*Transfer.* 2009;132(2):023406-023406-8.  
doi:10.1115/1.4000242.

**RESEARCH PAPERS:** Applications

## A Numerical Simulation of Combined Radiation and Natural Convection in a Differential Heated Cubic Cavity

P. Kumar and V. Eswaran

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*Transfer.* 2009;132(2):023501-023501-13.  
doi:10.1115/1.4000180.

An Extension of the Large-Cell Radiation Model for the

## Case of Semitransparent Nonisothermal Particles

Leonid A. Dombrovsky

*J. Heat*

*Transfer.* 2009;132(2):023502-023502-8.  
doi:10.1115/1.4000181.

Effect on Radiant Heat Transfer at the Surface of a Pool

## Fire Interacting With a Water Mist

J. P. Garo, J. P. Vantelon and D. Lemonnier

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*Transfer.* 2009;132(2):023503-023503-9.  
doi:10.1115/1.4000185.

Fixed Grid Simulation of Radiation-Conduction

## Dominated Solidification Process

Piotr Łapka and Piotr Furmański

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*Transfer.* 2009;132(2):023504-023504-10.  
doi:10.1115/1.4000188.

Heat Transfer Augmentation: Radiative-Convective Heat

## Transfer in a Tube With Fiber Array Inserts

Andreas Hantsch, Ulrich Gross and Andrew R. Martin

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*Transfer.* 2009;132(2):023505-023505-6.

Transient Radiation and

doi:10.1115/1.4000189.

## Conduction Heat Transfer in

### Glass Sheets by the Thin Layer Approximation

Georges El Hitti, Maroun Nemer and Khalil El Khoury

*J. Heat*

*Transfer.* 2009;132(2):023506-023506-8.

doi:10.1115/1.4000228.

## An Efficient Method for Radiative Heat Transfer Applied

### to a Turbulent Channel Flow

Atsushi Sakurai, Shigenao Maruyama, Koji Matsubara, Takahiro Miura and Masud Behnia

*J. Heat*

*Transfer.* 2009;132(2):023507-023507-7.

doi:10.1115/1.4000240.

## Technical Briefs

### A Parametric Case Study in

### Radiative Heat Transfer Using the Reverse Monte-Carlo Ray-Tracing With Full-Spectrum k-Distribution Method

Xiaojing Sun and Philip J. Smith

*J. Heat*

*Transfer.* 2009;132(2):024501-024501-5.

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## Green's Function Approach to Nonlinear Conduction and

### Surface Radiation Problems

Matthew R. Jones and Vladimir P. Solovjov

*J. Heat*

*Transfer.* 2009;132(2):024502-024502-5.

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