



## International Journal of Thermodynamics

### Contents of Volume 13

#### Vol. 13 No. 1

E. Canfield  
M. B. Bailey  
W. Domigan

M. Sorin  
E. Ayotte-Sauvé  
F. Sadeghi  
F. Rheault

K. Nantha Gopal  
R. Subbarao  
V. Pandiyarajan  
R. Velraj

A. Sciacovelli  
C. E. Smith  
M. R. von Spakovsky  
V. Verda

#### March 2010

- 1 Creation of an Exergetic Based Leak Detection and Diagnosis Methodology for Automotive Carbon Dioxide Air Conditioning Systems
- 9 Thermodynamic Equipartition and Energy Efficient Membrane Networks
- 15 Thermodynamic Analysis of a Diesel Engine Integrated with a PCM Based Energy Storage System
- 23 Quantum Thermodynamics: Non-equilibrium 3D Description of an Unbounded System at an Atomistic Level

#### Vol. 13 No. 2

W. S. Wołczyński

S. Werle  
R. K. Wilk

K. T. Wang  
M. Q. Brewster

S. Parveen  
M. Yasmin  
M. Gupta  
J. P. Shukla

E. Zanchini  
G. P. Beretta

#### June 2010

- 35 Lamella / Rod Transformation as described by the Criterion of Minimum Entropy Production
- 43 A Constant-Volume Bomb and Co-Flow Reactor Investigation of Ignition Phenomenon of Hydrocarbon Fuels in High Temperature Oxidizer
- 51 An Intermolecular Vibration Model for Lattice Ice
- 59 Thermoacoustical and Excess Properties of Binary Mixtures of Ethyl Butyrate with Methanol and Vinyl Acetate
- 67 Removing Heat and Conceptual Loops from the Definition of Entropy

**Vol. 13 No. 3****September 2010**

- F. Petrakopoulou  
G. Tsatsaronis  
T. Morosuk 77 Conventional Exergetic and Exergoeconomic Analyses of a Power Plant with Chemical Looping Combustion for CO<sub>2</sub> Capture
- G. Zhang  
L. Gao  
H. Jin  
X. Zhang 87 Analysis of Hybrid Configuration of Coal-Based Methanol-Power Polygeneration System
- A. Sciacovelli 95 Thermodynamic Optimization of a Monolithic-Type Solid Oxide Fuel Cell
- C. Albuquerque-Neto  
L. F. Pellegrini  
M. S. Ferreira  
S. Oliveira Jr.  
J. I. Yanagihara 105 Exergy Analysis of Human Respiration under Physical Activity
- F. C. Magazoni  
J. B. Monteiro  
S. Colle  
J. M. Cardemil 111 Cooling of Ethanol Fermentation Process Using Absorption Chillers

**Vol. 13 No. 4****December 2010**

- K. Eisazadeh-Far  
F. Parsinejad  
H. Metghalchi  
J. C. Keck 119 A Thermodynamic Model for Argon Plasma Kernel Formation
- H. Sayyaadi  
M. Babaelahi 127 Exergetic Optimization of a Refrigeration Cycle for Re-Liquefaction of LNG Boil-Off Gas
- J. Ojeda  
F. Méndez 135 Application of Bejan's Constructal Theory to a Solar Collector System. Part I: The Fundamentals to Define the First Construction
- A. Zaleta-Aguilar  
R. A. Domínguez-Vega  
A. Olivares-Arriaga  
V. H. Rangel-Hernández 143 Thermoeconomic Diagnosis Theory Based on Thermo-Characterization
- S. Motahar  
A. A. Alemrajabi 153 An Analysis of Unglazed Transpired Solar Collectors Based on Exergetic Performance Criteria