

# Contents

---

## Vol. 22, No. 3, 2013

A simultaneous English language translation of this journal is available from Pleiades Publishing, Ltd.  
Distributed worldwide by Springer. *Journal of Engineering Thermophysics* ISSN 1810-2328.

---

Methane Combustion in Hydrate Systems: Water–Methane  
and Water–Methane–Isopropanol

*V. E. Nakoryakov, S. Ya. Misyura, S. L. Elistratov,  
A. Yu. Manakov, and A. A. Sizikov*

169

Disintegration of Flows of Superheated Liquid Films and Jets

*A. N. Pavlenko, V. P. Koverda, A. V. Reshetnikov,  
A. S. Surtaev, A. N. Tsoi, N. A. Mazheiko,  
K. A. Busov, and V. N. Skokov*

174

Experimental Determination of Superheated Liquid  
Density by the Optical Fiber Method

*A. L. Gurashkin, A. A. Starostin, A. A. Uimin,  
A. D. Yampol'skiy, G. V. Ermakov, and P. V. Skripov*

194

Three-Dimensional Free Convection MHD Flow in a Vertical Channel  
through a Porous Medium with Heat Source and Chemical Reaction

*M. Kar, G. C. Dash, S. N. Sahoo, and P. K. Rath*

203

Numerical Investigation of the Tangential Stress Effects  
on a Fluid Flow Structure in a Partially Open Cavity

*O. N. Goncharova and O. A. Kabov*

216

New Group Contribution Method for the Prediction  
of Normal Melting Points

*A. A. Pérez Ponce, I. Saljate, G. Pulgar-Villarroel,  
L. Palma-Chilla, and J. A. Lazzús*

226

Special Features of the Tungsten Wire Heat Transfer and the WO<sub>3</sub>  
Nanoparticle Synthesis in Supercritical Water

*A. A. Vostrikov, D. Yu. Dubov, and M. Ya. Sokol*

236

Two-Velocity Dynamics of Compressible Heterophase Media

*Yu. V. Perepechko and K. E. Sorokin*

241

Exergy Analysis for Greener Gas Turbine Engine Arrangements

*Y. S. Najjar and S. Al-Absi*

247

---