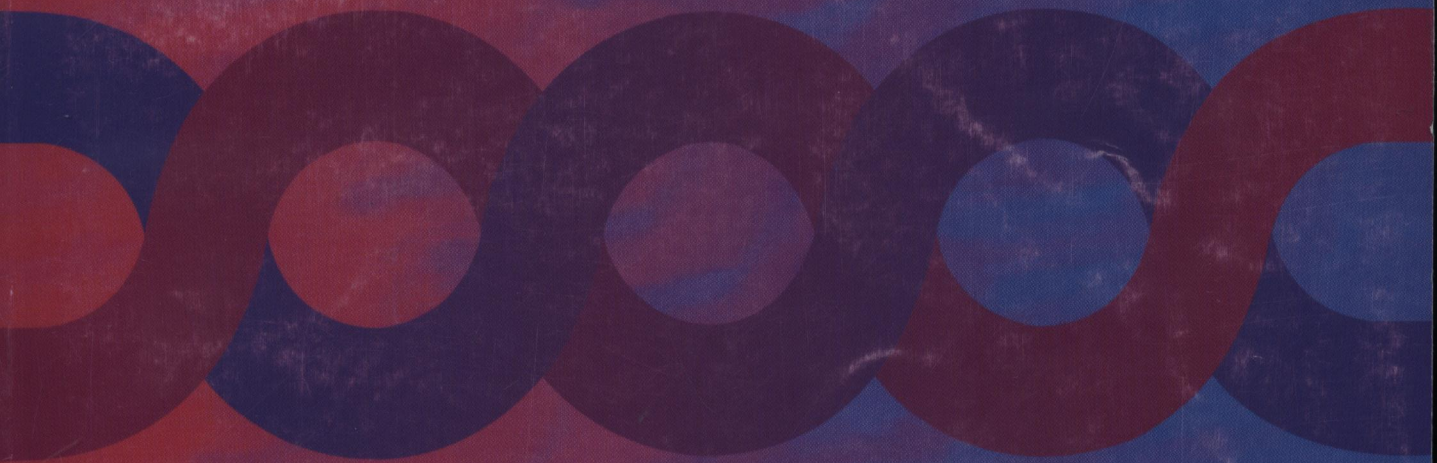
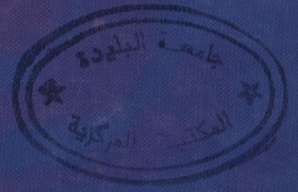


# APPLIED THERMAL ENGINEERING



Editor-in-Chief: *David A. Reay*

DESIGN . PROCESSES . EQUIPMENT . ECONOMICS

Also available on

SCIENCE @ DIRECT®

[www.sciencedirect.com](http://www.sciencedirect.com)



# APPLIED THERMAL ENGINEERING

DESIGN · PROCESSES · EQUIPMENT · ECONOMICS

Volume 29, Numbers 2-3

February 2009

## CONTENTS

- |  |     |   |
|--|-----|---|
| J. M. PONCE-ORTEGA,<br>M. SERNA-GONZÁLEZ and<br>A. JIMÉNEZ-GUTIÉRREZ | 203 | Use of genetic algorithms for the optimal design of shell- and -tube heat exchangers  |
| S. LE'AN, Z. YUANYANG,<br>L. LIANSHENG and S. PENGCHENG              | 210 | Performance of a prototype Stirling domestic refrigerator   |
| B.-J. TSAI and Y. L. WANG  | 216 | A novel Swiss-Roll recuperator for the microtur-<br>bine engine   |
| H. DEMIR, A. KOYUN and G. TEMIR                                      | 224 | Heat transfer of horizontal parallel pipe ground<br>heat exchanger and experimental verification  |
| A. ABUSOGLU and M. KANOGLU   | 234 | Exergetic and thermoeconomic analyses of diesel<br>engine powered cogeneration: Part 1 – Formulations   |
| A. ABUSOGLU and M. KANOGLU   | 242 | Exergetic and thermoeconomic analyses of diesel<br>engine powered cogeneration: Part 2 – Application  |
| Y.-W. CHIU and J.-Y. JANG  | 250 | 3D numerical and experimental analysis for<br>thermal-hydraulic characteristics of air flow inside<br>a circular tube with different tube inserts       |
| Y. KOITO, M. S. AHAMED,<br>S. HARADA and H. IMURA                    | 259 | Operational characteristics of a top-heat-type long<br>heat transport loop through a heat exchanger   |
| L. BOUMARAF and A. LALLEMAND   | 265 | Modeling of an ejector refrigerating system operat-<br>ing in dimensioning and off-dimensioning condi-<br>tions with the working fluids R142b and R600a |
| R. NORDMAN and T. BERNTSSON  | 275 | Use of advanced composite curves for assessing<br>cost-effective HEN retrofit I: Theory and concepts  |
| R. NORDMAN and T. BERNTSSON  | 282 | Use of advanced composite curves for assessing<br>cost-effective HEN retrofit II. Case studies  |
| M. MOHAGHEGHI and<br>J. SHAYEGAN                                     | 290 | Thermodynamic optimization of design variables<br>and heat exchangers layout in HRSGs for CCGT,<br>using genetic algorithm                              |
| R. K. SARANGI, A. BHATTACHARYA<br>and R. S. PRASHER                  | 300 | Numerical modelling of boiling heat transfer in<br>microchannels  |
| C. B. CHIOU, C. H. CHIOU,<br>C. M. CHU and S. L. LIN                 | 310 | The application of fuzzy control on energy saving<br>for multi-unit room air-conditioners   |
| T. HASEGAWA and N. KAWASHIMA   | 317 | A new technique to measure the temperature of a<br>rotating motor shaft   |

[continued on inside back cover



ELSEVIER



1359-4311(200902)29:2-3;1-B

Indexed/Abstracted in: *Appl. Mech. Rev.*, *Res. Alert*, *Cam. Sci. Abstr.*,  
*Chemical Abstracts Service*, *Curr. Cont./Eng. Tech. & Appl. Sci.*, *Curr. Tech. Ind.*,  
*EIC Intell.*, *Eng. Ind.*, *Metals Abstr.*, *Curr. Cont. SCISEARCH Data.*, *TCEA*,  
Also covered in the abstract and citation database SCOPUS®. Full text available on ScienceDirect®

Printed by Polestar Wheatons Ltd, Exeter, UK