

A Word from the Subject Editor

This issue of the journal *Thermal Science* contains 27 papers dedicated to the research in the field of internal combustion engines. The attention of the researchers is mostly oriented to the global problems facing our planet, whose solution is crucial for future sustainable technological development. These are of course, on the one hand, energy efficiency and problems in finding and using alternative and preferably renewable fuels, and, on the other hand, environmental pollution. As these problems are highly related to internal combustion engines, research efforts are being focused in that direction.

Research methods range from the application of different levels of mathematical simulation of engine working process to experimental investigation of engine global brake parameters and parameters of working process using in-cylinder events recording and analyzing. Mathematical simulation allows the assessment of the impact of structural and regulatory parameters on engine energy efficiency and environmental characteristics for a broad range of parameter values, which otherwise would be very expensive, time-consuming, and sometimes impossible to evaluate experimentally. The experiments in this approach are of small scale and mainly used for calibration and verification of simulation models. Other approaches use mathematical modelling and sophisticated experimental procedures simultaneously for the identification of unknown or partially known simulation model parameters. On the other hand, some of the papers published in this issue were of purely experimental character and mathematical methods were mainly used for processing the experimental results.

If we evaluate the conditional classification of papers according to the type of applied mathematical models, then the first 8 papers use the multidimensional modelling approach of the flow field and heat and mass transport phenomena and chemical reactions in the workspace (the CFD modelling approach). In the next 8 papers the so-called dimensionless thermodynamic models are applied, usually with a phenomenological approach to some important aspects, such as unsteady flow in pipelines, flame propagation through the chamber in spark-ignition engines or development of fuel jet and combustion in diesel engines. Also in this category are the articles that deal with regression modelling of the experimental results and the application of fuzzy logic in simulation.

The following 9 papers are of purely experimental character and are mainly dealing with laboratory testing of energy and environmental characteristics of engines operated with different types of alternative fuels and their blends with conventional mineral fuels.

In papers dealing with mathematical simulations, as well as in those concerning the experimental results of investigations, both spark-ignition and compression-ignition engines are considered. Also, unconventional combustion systems, for example HCCI (homogeneous charge compression ignition) have been investigated. The problems of alternative fuels application (different types of biodiesels, alcohols, compressed natural gas, generated biogas, the addition of hydrogen, *etc.*) have been investigated in a large number of theoretical and experimental research articles.

In addition to papers covering energy and environmental problems of the internal combustion engines, primarily arising due to their status as the primary power source in auto transport, there are two papers dealing with the conditions and organization of traffic, which is an important aspect in the overall effort to increase energy efficiency and environmental protection.

On a final note, I can say that it is a great satisfaction to see several papers by very young authors – doctoral students and even candidates for doctoral studies. Guided by the principle that research activities of young people should be stimulated, the review process for these papers was particularly sensitive and aimed at encouraging and helping them to achieve full potential while, of course, maintaining the criteria for the quality of the journal.

Prof. Dr. Mirosljub Tomić, Subject editor
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University of Belgrade, Belgrade, Serbia

Note: As earlier, we listed names of the experts accepted to made reviews of the papers published in this issue.

List of reviewers involved in the choice of papers for this issue

- Adrian Irimescu, Politehnica University of Timisoara, Romania
- Altun Sehmus, Karadeniz Techn. University, Turkey
- Apura Kumar Roy, Birla Institute of Technology, Mersa, India
- Afsin Güngör, Akdeniz University, Turkey
- Ayhan Demirbas, Karadeniz Techn. University, Turkey
- Bin Zhao, Liaoning Shihua University, China
- Bjarne Andresen, University of Copenhagen, Danmark
- Boran Pikula, University of Sarajevo, BiH
- C.S. Cheung, Hong Kong Polytechnic University, China
- Danilo Nikolić, University of Montenegro, Montenegro
- Darko Kozarac, University of Zagreb, Croatia
- Djurdjica Stojanović, University of Novi Sad, Serbia
- Eloisa Torres Jiménez, University of Jaen, Spain
- Emil Marinov, University of Rousse, Bulgaria
- Enso Ikonen, University of Oulu, Finland
- Evangelos Giakoumis, National Technical Univer. of Athens, Greece
- Federico Perini, Univers. di Modena e Reggio Emilia, Italy
- Ferdinand Trenc, University of Ljubljana, Slovenia
- Franco Ruzzenenti, University of Siena, Italy
- Guoxin Lin, Xiamen University, China
- Hans Aichlmayer, Lawrence Livermore National Lab., USA
- Imdat Taymaz, University of Sakarya, Turkey
- Ingemar Andersson, Chamlers University of Technol., Sweden
- Ivan Filipovic, University of Sarajevo, BiH
- Jan Cvengros, Slovak University of Technology, Slovakia
- Jerzy Merksiz, Poznan University of Technology, Poland
- Jessica Brakora, University of Wisconsin, USA
- Jesus Benajes, Technical University of Valencia, Spain
- Jozef Mikulec, Slovakia
- Lingen Chen, Wuhan Naval University of Engineer, China
- Luca Andreassi, Universita di Roma, Italy
- Luca Motosi, University of Modena, Italy
- Yasser Mahmoudi Larimi, University of Cambridge, UK
- Mariano Suarez, University of Castilla-La Mancha, Spain
- Maria Pilar Dorado, University of Cordoba, Spain
- Maria Reyes Garsia, University of Castilla-La Mancha, Spain
- Michel Feidt, University of Nancy, France
- Miloslaw Kozak, Poznan University of Technology, Poland
- Miroslub Tomić, University of Belgrade, Serbia
- Miroslaw Weclas, Georg Simon Ohm Univ, Germany
- Muammer Ozkan, Yildiz Technical University, Turkey
- Nebojša Milovanović, Mahle Powertrain Ltd., Northampton, UK
- Nenad Miljić, University of Belgrade, Serbia
- Nick Marinov, Lawrence Livermore National Lab., USA
- Nicolae Burnete, Technical University of Cluj, Romania
- N. R. Banapurmath, BVB College of Engineering and Technology, Hubli, Karnatak, India
- Qian Wang, Jiansu University, China
- Radivoje Pešić, University of Kragujevac, Serbia
- Rasim Bechet, Batman University, Turkey
- Robert Evans, University of British Columbia, Canada
- Roussos Papagiannakis, Hellenic Air Force Academy, Greece
- S. K. Tyagi, National Institute New Delhi, India
- S. Murugan, National Institute of Technology, Rourkela, India
- Sebastian Verhelst, Ghent University, Belgium
- Sergej Sazhin, University of Brighton, UK
- Sergio Bova, University of Calabria, Cosenza, Italy
- Simona Merola, CNR Istituto Motori, Napoli, Italy
- Simon Martinez, Universidad Autónoma de Nuevo León, Mexico
- Slobodan Popović, University of Belgrade, Serbia
- Stoian Petrescu, University Politehnica Bucharest, Romania
- Stoica Virgil, Universita Politehnica Timisoara, Romania
- Stojan Petrović, University of Belgrade, Serbia
- Sung Wook Park, Hanyang University, Korea
- Tarkan Sandalci, Yildiz Technical University, Turkey
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- Yumrutas Recep, University of Gaziantep, Turkey
- Zuohua Huang, Xi'an Jiaotong University, China
- Zafer Dulger, Kocaeli University, Turkey
- Zhi-xia HE, Jiangsu University, China
- Zhong Wang, Jiangsu University, China
- Zoran Jovanović, Vinča Insitute, Belgrade, Serbia
- Zoran Lulić, University of Zagreb, Croatia
- Zoran Miljković, University of Belgrade, Serbia

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