37th International Symposium on Combustion Distinguished Papers Announced

We are pleased to announce the complete list of Distinguished Papers from the 37th International Symposium on Combustion which was held in Dublin, Ireland in 2018. These papers will now be reviewed by the Silver Medal Committee. Announcement of the medal selection will be made at the 38th Symposium in Adelaide, Australia in 2020. Congratulations to all the authors!

Elsevier will also continue their recent practice of making these papers available for download, at no charge, between the months of February and April 2019. We appreciate the continued support of Elsevier in this effort to make these papers accessible to all our members. Look for an upcoming email with the link to the papers.

Listing of papers follows:

1. Gas-Phase Reaction Kinetics

Knowledge generation through data research: New validation targets for the refinement of kinetic mechanisms

N. Hansen[1], X. He[2], R. Griggs[1], K. Moshammer[2]

[1]Combustion Research Facility, Sandia National Laboratories

[2]Physikalisch-Technische Bundesanstalt (PTB), Department of Thermophysical Quantities

2. Soot, Nanomaterials, and Large Molecules

Insights into incipient soot formation by atomic force microscopy

Fabian Schulz[1], Mario Commodo[2], Katharina Kaiser[1], Gianluigi De Falco[3], Patrizia Minutolo[2], Gerhard Meyer[1], Andrea D'Anna[3], Leo Gross[1]

[1]IBM Research − Zurich

[2]Istituto di Ricerche sulla Combustione, CNR

[3]Dipartimento di Ingegneria Chimica, dei Materiali e della Produzione Industriale - Università degli Studi di Napoli Federico II

3. Diagnostics

Single-ended mid-infrared laser-absorption sensor for time-resolved measurements of water concentration and temperature within the annulus of a rotating detonation engine

Wen Yu Peng[1], Séan J. Cassady[1], Christopher L. Strand[1], Christopher S. Goldenstein[2], R. Mitchell Spearrin[3], Christopher M. Brophy[4], Jay B. Jeffries[1], Ronald K. Hanson[1]

[1]Department of Mechanical Engineering, Thermosciences Division, Stanford University

[2]School of Mechanical Engineering, Purdue University

[3]Department of Mechanical and Aerospace Engineering, University of California, Los Angeles

[4]Department of Mechanical and Aerospace Engineering, Naval Postgraduate School

4. Laminar Flames

Effect of stoichiometric mixture fraction on nonpremixed H_2–O_2–N_2 edge-flames

Zhenghong Zhou, Siena S. Applebaum, Paul D. Ronney

Department of Aerospace and Mechanical Engineering, University of Southern California

5. Turbulent Flames

A mixture-fraction-based hybrid binomial Langevin-multiple mapping conditioning model

Andrew P. Wandel[1], R. Peter Lindstedt[2]

[1]University of Southern Queensland, Computational Engineering and Science Research Centre, School of Mechanical and Electrical Engineering

[2]Department of Mechanical Engineering, Imperial College London

6. Spray, Droplet, and Supercritical Combustion

A hybrid droplet vaporization-chemical surrogate approach for emulating vaporization, physical properties, and chemical combustion behavior of multicomponent fuels

Alanna Y. Cooney, Simcha L. Singer

Department of Mechanical Engineering, Marquette University

7. Detonations, Explosions, and Supersonic Combustion

Compressible turbulent flame speeds of highly turbulent standing flames

Jonathan Sosa[1], Jessica Chambers[1], Kareem A. Ahmed[1], Alexei Poludnenko[2], Vadim N. Gamezo[3]

[1]Center for Advanced Turbomachinery & Energy Research, Department of Mechanical and Aerospace Engineering, University of Central Florida

[2]Department of Aerospace Engineering, Mechanical & Aerospace Engineering, Texas A&M University

[3]Laboratories for Computational Physics and Fluid Dynamics, Naval Research Laboratory

8. Solid Fuel Combustion

A model of the chemical composition and pyrolysis kinetics of lignin

Karla Dussan[1,2], Stephen Dooley[3], Rory F.D. Monaghan[1,2]

[1]Mechanical Engineering, National University of Ireland Galway

[2]MaREI Centre for Marine and Renewable Energy, Environmental Research Institute, University College Cork

[3]School of Physics, Trinity College Dublin, The University of Dublin

9. Fire Research

Flame length of buoyant turbulent slot flame

Wei Gao[1], Naian Liu[1], Yan Jiao[1], Xiaodong Xie[1], Ying Pan[1], Zilong Li[1], Xisheng Luo[1], Linhe Zhang[1], Ran Tu[2]

[1]State Key Laboratory of Fire Science, University of Science and Technology of China

[2]College of Mechanical Engineering and Automation, Huaqiao University

10. Stationary Combustion Systems and Control of Greenhouse Gas Emissions

Mechanism and kinetics of Cu_2O oxidation in chemical looping with oxygen uncoupling

Mingze Su[1], Jie Cao[1], Xin Tian[1], Yongliang Zhang[2], Haibo Zhao[1]

[1]State Key Laboratory of Coal Combustion, Huazhong University of Science and Technology

[2]State Key Laboratory of Power Systems, Department of Thermal Engineering, Tsinghua University

11. Internal Combustion Engines

A simplified CFD model for spectral radiative heat transfer in high-pressure hydrocarbon–air combustion systems

C. Paul[1], D.C. Haworth[1], M.F. Modest[2]

[1]Department of Mechanical and Nuclear Engineering, The Pennsylvania State University

[2]University of California, Merced

12. Gas Turbine and Rocket Engine Combustion

Time-resolved study of transient soot formation in an aero-engine model combustor at elevated pressure

M. Stöhr[1], K.P. Geigle[1], R. Hadef[2], I. Boxx[1], C.D. Carter[3], M. Grader[1], P. Gerlinger[1]

[1]German Aerospace Center (DLR), Institute of Combustion Technology

[2]Université Larbi Ben M'Hidi, Institut de Génie Mécanique

[3]Air Force Research Laboratory, Wright-Patterson Air Force Base

13. Other Concepts

Evaluation of a novel miniaturised microwave resonating igniter: The Flat Panel Igniter

Minh K. Le, Atsushi Nishiyama, Yuji Ikeda

Imagineering, Inc.