

**THIRD EUROPEAN COMBUSTION MEETING
ECM 2007**

PROGRAM

**MEDITERRANEAN AGRONOMIC INSTITUTE OF CHANIA
CRETE, GREECE 11-13 APRIL 2007**

THIRD EUROPEAN COMBUSTION MEETING ECM2007

MAICH, CHANIA, CRETE, GREECE, 11-13 APRIL 2007

SCHEDULE

TUESDAY 10 APRIL

17:00	Registration
18:00	Welcome Reception

WEDNESDAY 11 APRIL

8:00	Registration			
8:45	Opening and Welcome Address <i>Poseidon</i> I. Gökalp, President of the Federation of the European Sections of the Combustion Institute G. Skevis, President of the Greek Section of the Combustion Institute			
9:15	Invited Lecture <i>Poseidon</i> A. S. Tomlin, University of Leeds, U.K. “Can Combustion Technologies Reduce our Impact on both the Global Climate and Local Air Quality?”			
10:15	Coffee Break			
10:30	Poster Session 6 <i>Epicurus</i> Laminar Flames	Poster Session 8 <i>Heraklitus</i> Turbulent Combustion - Modelling & Simulation I	Poster Session 13 <i>Thalis I</i> Catalytic Combustion and Fuel Cells	Poster Session 19 <i>Thalis II</i> Stationary Combustion - Fluidised Beds and Gasifiers
13:00	Presentations by Local Hosts <i>Poseidon</i> A. Nikolaidis, Director, MAICH, Greece “Research Activities at MAICH” I. Gryspolakis, Rector, Technical University of Crete, Greece “Technical University of Crete: Research and Innovation”			
13:45	Lunch			
15:00	Invited Lecture <i>Poseidon</i> M. Hupa, Abo Akademi University, Finland “Large Scale Combustion of Biofuels – Recent Research Topics”			
16:00	Coffee Break			
16:15	Poster Session 1 <i>Epicurus</i> Combustion Chemistry – Reaction Kinetics I	Poster Session 14 <i>Thalis I</i> Material Synthesis and Nanoparticles	Poster Session 15 <i>Heraklitus</i> Spray and Droplet Combustion	Poster Session 23 <i>Thalis II</i> Gas Turbine Combustion

THURSDAY 12 APRIL

9:15	Invited Lecture <i>Poseidon</i> G. T. Kalghatgi, Shell Global Solutions, U.K. “Sustainable Automotive Fuels for the Future”			
10:15	Coffee Break			
10:30	Poster Session 5 <i>Epicurus</i> Combustion Diagnostics	Poster Session 10 <i>Heraklitus</i> Turbulent Combustion - DNS & LES	Poster Session 11 <i>Thalis I</i> Heterogeneous Combustion - Coal	Poster Session 20 <i>Thalis II</i> Stationary Combustion - Burners and Furnaces
13:00	Lunch			
14:30	Invited Lecture <i>Poseidon</i> P. Salatino, University of Naples, Italy “Overlapping of Purely Thermally Activated and Heterogeneous Processes in Combustion and Gasification of Solid Fuels”			
15:30	Coffee Break			
15:45	Poster Session 4 <i>Heraklitus</i> Combustion Chemistry – Soot & NO _x	Poster Session 9 <i>Thalis I</i> Turbulent Combustion - Modelling & Simulation II	Poster Session 17 <i>Epicurus</i> Detonations and Explosions	Poster Session 21 <i>Thalis II</i> Stationary Combustion - Mild Combustion and Cool Flames
19:30	Conference Dinner			

FRIDAY 13 APRIL

9:15	Invited Lecture <i>Poseidon</i> O. Deutschmann, University of Karlsruhe, Germany “High Temperature Catalysis: Fundamentals and Applications”			
10:15	Coffee Break			
10:30	Poster Session 2 <i>Epicurus</i> Combustion Chemistry – Reaction Kinetics II	Poster Session 7 <i>Thalis I</i> Turbulent Combustion - Experiments	Poster Session 12 <i>Thalis II</i> Heterogeneous Combustion - Biomass	Poster Session 22 <i>Heraklitus</i> IC Engines
13:00	Lunch			
14:00	Poster Session 3 <i>Thalis I</i> Combustion Chemistry – Mechanism Reduction	Poster Session 16 <i>Thalis I</i> Fire Research and Heat Transfer Processes	Poster Session 18 <i>Heraklitus</i> Combustion Instabilities, Oscillations and Control	
16:00	Poster Panel Discussion <i>Poseidon</i>			
17:00	Farewell Reception			

POSTER SESSIONS

SESSION 1 - COMBUSTION CHEMISTRY – REACTION KINETICS I

- MODELLING OF THE FORMATION OF LIGHT ACIDS IN PROPANE FLAMES 1-2
F. Battin-Leclerc¹, A. A. Konnov², J. L. Jaffrezo³ & M. Legrand³
¹ *Département de Chimie-Physique des Réactions, CNRS-INPL, Nancy, FRANCE*
² *Vrije Universiteit Brussel, BELGIUM*
³ *Laboratoire de Glaciologie et Géophysique de l'Environnement, CNRS, St Martin d'Hères, FRANCE*
- EXPERIMENTAL AND DETAILED KINETIC MODELLING OF THE OXIDATION OF NATURAL GAS, NATURAL GAS/SYNGAS MIXTURES AND EFFECT OF BURNT GAS RECIRCULATION 1-3
T. Le Cong & P. Dagaut
Laboratoire de Combustion et Systèmes Réactifs, CNRS, Orléans, FRANCE
- KINETIC STUDY OF AVIATION FUELS OXIDATION IN A JSR: JET-A1 AND BIO-KEROSENE 1-4
S. Gaïl & P. Dagaut
Laboratoire de Combustion et Systèmes Réactifs, CNRS, Orléans, FRANCE
- SELF-IGNITION OF A LEAN METHANE-AIR MIXTURE AT HIGH PRESSURE IN A RAPID COMPRESSION MACHINE..... 1-5
C. Strozzi, M. Bellenoue, J. Sotton & A. Mura
Laboratoire de Combustion et de Détonique, CNRS, Poitiers, FRANCE
- AB INITIO STUDY OF SOME RADICALS OF FATTY ACIDS METHYL ESTERS..... 1-6
A. Osmont¹, L. Catoire² & I. Gökalp²
¹ *Laboratoire de Combustion et Systèmes Réactifs, CNRS, Orléans, FRANCE*
² *Laboratoire de Combustion et Systèmes Réactifs, CNRS, and University of Orléans, FRANCE*
- A COMPLEX CHEMICAL KINETIC MECHANISM FOR THE OXIDATION OF GASOLINE SURROGATE FUELS: n HEPTANE, iso OCTANE AND TOLUENE – MECHANISM DEVELOPMENT AND VALIDATION..... 1-7
A. Pires da Cruz¹, C. Pera¹, J. Anderlohr¹, R. Bounaceur² & F. Battin Leclerc²
¹ *Institut Français du Pétrole, Lyon, FRANCE*
² *DCPR, CNRS, INPL-ENSIC, FRANCE*
- KINETICS IN AN AMMONIA CONTAINING FLAME AND A PRELIMINARY INVESTIGATION OF ITS USE AS FUEL IN SPARK IGNITION ENGINES 1-8
C. Duynslaegher², H. Jeanmart² & J. Vandooren¹
¹ *Université Catholique de Louvain, Laboratoire de Physico-Chimie de la Combustion, BELGIUM*
² *Université Catholique de Louvain, Unité de Thermodynamique et de Turbomachines, BELGIUM*
- COMPARISON OF THE STRUCTURE OF C₆H₆/O₂/Ar AND C₆H₆/C₂H₂/O₂/Ar RICH FLAMES..... 1-9
V. Detilleux & J. Vandooren
Université Catholique de Louvain, BELGIUM
- THEORETICAL KINETIC STUDY OF THE RING OPENING OF CYCLIC ALKANES..... 1-10
B. Sirjean¹, P. A. Glaude¹, M. F. Ruiz-Lopez² & R. Fournet¹
¹ *Département de Chimie-Physique des Réactions, CNRS-INPL, Nancy, FRANCE*
² *Université Henri Poincaré, Equipe de Chimie et Biochimie Théorique, FRANCE*

INVESTIGATION OF LAMINAR LOW PRESSURE STOICHIOMETRIC CH ₄ /C ₂ H ₆ /C ₃ H ₈ /O ₂ /N ₂ AND CH ₄ /C ₂ H ₆ /C ₃ H ₈ /H ₂ /O ₂ /N ₂ FLAMES.....	1-11
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¹ <i>Physico-Chimie des Processus de Combustion et de l'Atmosphère, CNRS, FRANCE</i>	
<i>Université des Sciences et Technologies de Lille, FRANCE</i>	
² <i>Gaz de France, FRANCE</i>	
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H. Hippler, M. Klinger, S. Nasterlack, M. Olzmann & F. Striebel	
<i>Universität Karlsruhe, Institut für Physikalische Chemie, GERMANY</i>	
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<i>Universität Karlsruhe, Institut für Physikalische Chemie, GERMANY</i>	
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M. Crochet ^{1,3} , G. Vanhove ^{1,3} , R. Minetti ^{2,3} & M. Ribaucour ^{1,3}	
¹ <i>Université des Sciences et Technologies de Lille, FRANCE</i>	
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<i>K.U. Leuven, Department of Mechanical Engineering, BELGIUM</i>	
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M. Hartmann, M. Fikri, R. Starke & C. Schulz	
<i>Universität Duisburg-Essen, IVG, GERMANY</i>	
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K. Tian & B. Atakan	
<i>Universität Duisburg-Essen, Thermodynamik, IVG, GERMANY</i>	
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N. Sebbar ¹ , J. W. Bozzelli ² & H. Bockhorn ¹	
¹ <i>Universität Karlsruhe, Institut für Technische Chemie und Polymerchemie, GERMANY</i>	
² <i>New Jersey Institute of Technology, Department of Chemical Engineering, Chemistry and Environmental Science, USA</i>	
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G. Black ¹ , S. Pichon ¹ , H. J. Curran ¹ , J. M. Simmie ¹ , R. Donohue ¹ & N. Djebaili-Chaumeix ¹	
¹ <i>National University of Ireland, Combustion Research Centre, Galway, IRELAND</i>	
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D. Healy ¹ , H. J. Curran ¹ , G. Bourque ² & J. M. Simmie ¹	
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SESSION 2 - COMBUSTION CHEMISTRY – REACTION KINETICS II

- AUTOIGNITION OF n-PENTANE IN A RAPID COMPRESSION MACHINE:
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M. Ribaucour^{1,3}, R. Minetti^{2,3}, E. Sazhina⁴ & S. Sazhin⁴
¹ *Université des Sciences et Technologies de Lille, FRANCE*
² *Université d'Artois, FRANCE*
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⁴ *University of Brighton, School of Engineering, Faculty of Science and Engineering, U.K.*
- INFLUENCE OF CO₂ AND H₂ ON THE CHEMICAL STRUCTURE OF A PREMIXED,
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J. Biet, J. L. Delfau, L. Pillier & C. Vovelle
Laboratoire de Combustion et Systèmes Réactifs, CNRS, Orléans, FRANCE
- AUTO-IGNITION DELAYS OF HYDROGEN-NITROUS OXIDE-ARGON MIXTURES 2-2
R. Mével^{1,2}, F. Lafosse¹, L. Catoire^{1,2}, N. Chaumeix¹, G. Dupré^{1,2} & C. E. Paillard^{1,2}
¹ *Laboratoire de Combustion et Systèmes Réactifs, CNRS, Orléans, FRANCE*
² *Université d'Orléans, Faculté des Sciences, FRANCE*
- PYROLYSIS OF ETHANOL UNDER FLOW REACTOR CONDITIONS 2-3
M. Peg, M. P. Ruiz, A. Callejas, A. Millera, R. Bilbao & M. U. Alzueta
*University of Zaragoza, Department of Chemical and Environmental Engineering, Aragón Institute
of Engineering Research, SPAIN*
- MASS SPECTROMETRIC INVESTIGATIONS OF THE INFLUENCE OF FERROCENE
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K. Tian, U. Bergmann & B. Atakan
Universität Duisburg-Essen, Thermodynamik, IVG, GERMANY
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C. Xu, P. Vöhringer, M. Braun-Unkhoff, C. Naumann & P. Frank
DLR, Institut für Verbrennungstechnik, Stuttgart, GERMANY
- SHOCK-TUBE MEASUREMENTS OF THE IGNITION DELAY TIMES OF REFERENCE
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M. Fikri¹, R. Starke¹, G. T. Kalghatgi², P. Roth & C. Schulz¹
¹ *Universität Duisburg-Essen, Thermodynamik, IVG, GERMANY*
² *Shell Global Solutions, U.K.*
- AN EXPERIMENTAL AND MODELLING STUDY ON THE AUTO IGNITION OF
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U. Steil¹, A. Burcat², M. Braun-Unkhoff¹, C. Naumann¹, P. Frank¹ & M. Aigner¹
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² *Technion – I.I.T., Faculty of Aerospace Engineering, Haifa, ISRAEL*
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Chemical Research Center of the Hungarian Academy of Sciences, Budapest, HUNGARY

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S. Gail ¹ , S. M. Sarathy ¹ , S. A. Syed ¹ , M. Thomson ¹ & P. Dagaut ²	
¹ <i>University of Toronto, Department of Mechanical & Industrial Engineering, CANADA</i>	
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N. B. Anikin ¹ , S. Gersen ¹ , A. V. Sepman ¹ , A. V. Mokhov ¹ & H. B. Levinsky ^{1,2}	
¹ <i>University of Groningen, Laboratory for Fuel and Combustion Science, The Netherlands</i>	
² <i>Gasunie Engineering and Technology, N.V. Nederlandse Gasunie, Groningen, The NETHERLANDS</i>	
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L. Rutz ¹ , G. da Silva ² , J. W. Bozzelli ² & H. Bockhorn ¹	
¹ <i>Universität Karlsruhe, GERMANY</i>	
² <i>New Jersey Institute of Technology, USA</i>	
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P. Dagaut	
<i>Laboratoire de Combustion et Systèmes Réactifs, CNRS, Orléans, FRANCE</i>	
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¹ <i>Universität Karlsruhe, GERMANY</i>	
² <i>National University of Ireland, Combustion Research Centre, Galway, IRELAND</i>	
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A. Togkalidou, G. Skevis & M. Founti	
<i>National Technical University of Athens, Mechanical Engineering Department, Laboratory of Heterogeneous Mixtures and Combustion Systems, GREECE</i>	
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<i>National University of Ireland, Environmental Change Institute and Chemistry Department, Galway, IRELAND</i>	
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N. Leplat ¹ , A. Seydi ² & J. Vandooren ¹	
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² <i>Université Cheikh Anta Diop, Dakar, SENEGAL</i>	
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H. A. Gueniche, P. A. Glaude, R. Fournet & F. Battin-Leclerc	
<i>Département de Chimie-Physique des Réactions, CNRS-INPL, Nancy, FRANCE</i>	

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X. Lories ¹ , D. Peeters ¹ & J. Vandooren ²	
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G. Vanhove ^{1,3} , A. El Bakali ^{1,3} , M. Ribaucour ^{1,3} & R. Minetti ^{2,3}	
¹ <i>Université des Sciences et Technologies de Lille, FRANCE</i>	
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SESSION 3 - COMBUSTION CHEMISTRY – MECHANISM REDUCTION

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V. Dias & J. Vandooren	
<i>Université Catholique de Louvain, BELGIUM</i>	

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R. Aglave & J. Warnatz	
<i>Universität Heidelberg, Interdisciplinary Center for Scientific Computing (IWR), GERMANY</i>	

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R. Porter ¹ , M. Fairweather ¹ , J. F. Griffiths ² , K. J. Hughes ¹ & A. S. Tomlin ¹	
¹ <i>University of Leeds, School of Process, Environment and Materials Engineering, U.K</i>	
² <i>University of Leeds, School of Chemistry, U.K.</i>	

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W. T. Collins ¹ , S. Hochgreb ¹ , N. Swaminathan ¹ & J.-Y. Chen ²	
¹ <i>University of Cambridge, Department of Engineering, U.K.</i>	
² <i>University of California, Department of Mechanical Engineering, Berkeley, USA</i>	

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V. Reinhardt, M. Winckler, J. Warnatz & D. Lebiecz	
<i>Universität Heidelberg, Interdisciplinary Center for Scientific Computing (IWR), GERMANY</i>	

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W. P. Jones & S. Rigopoulos	
¹ <i>Imperial College London, Department of Mechanical Engineering, U.K.</i>	
² <i>The University of Manchester, School of Mechanical, Aerospace and Civil Engineering, U.K.</i>	

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A. Arvidsson ¹ , T. Lövås ² & F. Mauss ³	
¹ <i>Lund University, Department of Combustion Physics, LTH, SWEDEN</i>	
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³ <i>Brandenburgische Technische Universität Cottbus, GERMANY</i>	

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N. Ebenezer ¹ & F. Mauss ²	
¹ <i>Lund University, Division of Combustion Physics, LTH, SWEDEN</i>	
² <i>University of Cottbus, Department of Thermodynamics and Thermal Process Engineering, GERMANY</i>	
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V. Bykov ¹ , V. Gol'dshtein ² & U. Maas ¹	
¹ <i>Universität Karlsruhe, GERMANY</i>	
² <i>Ben-Gurion University of the Negev, ISRAEL</i>	
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M. Ban ¹ , P. Priesching ² & N. Duic ¹	
¹ <i>University of Zagreb, Faculty of Mechanical Engineering and Naval Architecture, CROATIA</i>	
² <i>AVL – AST, AUSTRIA</i>	

SESSION 4 – COMBUSTION CHEMISTRY – SOOT AND NO_x

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I. Naydenova, J. Marquetand & J. Warnatz	
<i>Universität Heidelberg, Interdisciplinary Center for Scientific Computing (IWR), GERMANY</i>	
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<i>The University of Tokushima, Department of Ecosystem Engineering, JAPAN</i>	
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K. Marschallek ¹ , L. Gasnot ² & J. F. Pauwels ²	
¹ <i>Université des Sciences et Technologie de Lille, FRANCE</i>	
² <i>Université d'Artois, FRANCE</i>	
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K. Roth ¹ , V. Scherer ¹ , S. Wirtz ¹ & W. Nastoll ²	
¹ <i>Ruhr-University Bochum, Department of Energy Plant Technology, GERMANY</i>	
² <i>Institut Français du Pétrole, Lyon, FRANCE</i>	
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A. G. Shmakov ^{1,2} , I. V. Dyakov ² , O. P. Korobeinichev ¹ , J. De Ruyck ² & A. A. Konnov ²	
¹ <i>Institute of Chemical Kinetics and Combustion, Novosibirsk, RUSSIA</i>	
² <i>Vrije Universiteit Brussel, Department of Mechanical Engineering, BELGIUM</i>	
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E. Betbeder-rey ^{1,2} , B. Fiorina ¹ , O. Gicquel ¹ , G. Moréac ² & N. Darabiha ¹	
¹ <i>Ecole Centrale Paris, CNRS, Laboratoire EM2C, FRANCE</i>	
² <i>Renault, DTAA, FRANCE</i>	
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C. Marchal ^{1,3} , G. Moréac ¹ , K. Netzell ² , M. Kasper ³ & F. Mauss ³	
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