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Officers of The Eastern States Section

List of Contributed Papers

### Invited Papers

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<td>&quot;Modeling Flame Phenomena,&quot; Moshe Mataion, Northwestern University.</td>
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<td>&quot;Status of Gaseous Detonation Waves and Their Role in Propulsion,&quot; E.K. Dabora,</td>
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<td>&quot;A Review of NOx Formation in Nonpremixed Flames,&quot; Stephen R. Tufts,</td>
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<td>&quot;Low Environmental Impact Fire Suppression Concepts,&quot; William L. Grosshandler</td>
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<td>and Richard G. Gann, National Institute of Standards and Technology.</td>
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Monday, December 5, 1994

Session A-1: Heterogeneous Combustion
Chairperson: B. Cetegen, University of Connecticut

9:30  1. Combustion of a Solid Cylinder in Low Speed Flows, C-hin-Tien Yang, Jeffrey S. Goldmert, James S. T'ien, Case Western Reserve University, Cleveland, OH, and David L. Urban, NYMA, Inc., Brook Park, OH


Monday, December 5, 1994

Session B-1: Flames
Chairperson: M. Tanoff, Yale University

9:30 8. An Experimental Study of Flame/Stretch Interactions for Premixed Hydrogen/Air Flames, K.T. Aung and G.M. Faeth, University of Michigan, Ann Arbor, MI

9:50 9. Wall Effects on the Propagation and Extinction of Strained, Laminar, Premixed Flames, F.N. Egolfopoulos and H. Zhang, University of Southern California, Los Angeles, CA


10:50 11. Numerical Simulation of the Interaction of Pressure Waves with Premixed and Non-Premixed Flames, Kuldeep Prasad, Yale University, New Haven, CT


Monday, December 5, 1994

Session C-1: Chemical Kinetics I
Chairperson: K. Brezinsky, Princeton University

9:30 15. Detailed Reaction Modeling on CHF₂Cl Pyrolysis: Influence and Uncertainty of ΔH₂o(1:CF₂), John J. DiFelice and Edward R. Ritter, Villanova University, Villanova, PA

9:50 16. A Shock Tube Study of the Pyrolysis of C₂H₃I, John D. Mertens, Trinity College, Hartford, CT, Margaret S. Wooldridge and Ronald K. Hanson, Stanford University, Stanford, CA

10:10 17. The Combination of Fluorinated Methyl Radicals at High Temperatures, Wing Tsang, National Institute of Standards and Technology, Gaithersburg, MD

10:50 18. LP/LIF Studies of the Reaction of OH with CHFCl₂ and CHF₂Cl over an Extended Temperature Range, Philip H. Taylor, Trench D. Fang and Barry Dellingcr, University of Dayton Research Institute, Dayton, OH

11:10 19. The AIO + O₂ Reaction System Over a Wide Temperature Range, David P. Belyan and Arthur Fontijn, Rensselaer Polytechnic Institute, Troy, NY

11:30 20. Desubstitution of Fluorotoluene by Atomic Hydrogen, Jeffrey A. Manion and Wing Tsang, National Institute of Standards and Technology, Gaithersburg, MD

Monday, December 5, 1994

Session A-2: Ignition
Chairperson: J. S. Tien, Case Western Reserve University

2:30 22. A Simple Kinetic Model for the Ignition of H\textsubscript{2}-O\textsubscript{2}, N.A. Tonello, M. Sichel, University of Michigan, Ann Arbor, MI and E.S. Oron, Naval Research Laboratory, Washington, DC

2:50 23. Parametric Study of the Numerical Solution of Radiation Induced Ignition of Solid Fuels, Jennifer R. Koski, Kevin M. Barry and Pandeli Durvetaki, Georgia Institute of Technology, Atlanta, GA

3:10 24. Radiative Ignition of a Wall Jet, H.B. Ring and P. Durvetaki, Georgia Institute of Technology, Atlanta, GA


4:10 26. Ignition of Kerosene Vapor/Air Mixtures with an ARF Excimer Laser, Moshe Lavid, Deju Zhou and Yu-Chen Li, Energia Inc., Princeton, NJ

4:30 27. Quantifying the Retarding Effect of Species Diffusion on Spatially-Dependent Ignition Events, Michael A. Tanoff and Mitchell D. Smooke, Yale University, New Haven, CT

Monday, December 5, 1994

Session B-2: Diagnostics
Chairperson: F. Gouldin, Cornell University

2:30 29. Phase-Resolved Velocity Field Measurements in Plumes of Helium/Air Mixtures, K.D. Kasper and B.M. Cetegen, University of Connecticut, Storrs, CT

2:50 30. Acetone and OH Imaging in an Acetone-seeded Methane/Air Diffusion Flame, Michael A.T. Marro and J. Houston Miller, George Washington University, Washington, DC


3:50 32. Infrared Spectroscopy of Methane/Oxygen Flames Inhibited with Fluorinated Compounds, Robert G. Daniel, Kevin L. McInesby, and Andrzej W. Miziolek, Army Research Laboratory, Aberdeen Proving Ground, MD


4:30 34. Tunable Diode Laser Absorption Spectroscopy Measurements of Carbon Monoxide in a Time-Varying Methane/Air Diffusion Flame, R.Reed Skaggs and J. Houston Miller, George Washington University, Washington, DC

Monday, December 5, 1994

Session C-2: Fires
Chairperson: H. Baum, NIST


2:50 37. Temperature Field During Flame Spread over Alcohol Pools: Measurements and Modelling, Fletcher J. Miller, Case Western Reserve University, Cleveland, OH, Howard D. Ross, NASA Lewis Research Center, Cleveland, OH, and David N. Schiller, University of California at Irvine, Irvine, CA

3:10 38. An Engineering Algorithm for the Estimation of Carbon Monoxide Generation in Enclosure Fires, William M. Pitts, National Institute of Standards and Technology, Gaithersburg, MD

3:50 39. Overview of a Theory for Simulating Smoke Movement Through Long Vertical Shafts in Zone-Type Fire Models, Leonard Y. Cooper, National Institute of Standards and Technology, Gaithersburg, MD

4:10 40. Smoke Movement in Corridors – Adding the Horizontal Momentum Equation to a Zone Model, Walter W. Jones and Takayuki Matsushita, National Institute of Standards and Technology, Gaithersburg, MD

4:30 41. Flame Height of Pool Fires, A. Hamins, K. Komishi, P. Borthwick, A. Hubbard and T. Kashiwagi, National Institute of Standards and Technology, Gaithersburg, MD

4:50 42. Pool Burning of Silicone Fluids, R. Buch, A. Hamins, D. Mattingly, J. Shields, P. Borthwick and T. Kashiwagi, National Institute of Standards and Technology, Gaithersburg, MD

Tuesday, December 6, 1994

Session A-3: Solids and Propellants
Chairperson: K. Kuo, Pennsylvania State University

9:30 43. The Plateau Region of Composite Propellants, Irvin Glassman, Princeton University, Princeton, NJ

9:50 44. Measurement of Temperatures and Radical Concentrations of Solid Propellant Flames Using Absorption Spectroscopy, Yeu-Cherng Lu, Todd Fryman and Kenneth K. Kuo, Pennsylvania State University, University Park, PA

10:10 45. Some Properties of Densely Packed Heterogeneous Components in Pyrotechnics and Solid Propellants, Clarke E. Hermance, University of Vermont, VT

10:50 46. Numerical Computation of Flame Spread over a Thin Solid in Forced Concurrent Flow with Gas-Phase Radiation, Ching-Biau Jiang and James S. Tien, Case Western Reserve University, Cleveland, OH

11:10 47. Laser Ignition and Combustion of Pulverized Coals, John C. Chen, North Carolina A&T State University, Greensboro, NC


11:50 49. An Eigenvalue Approach for Computing the Burning Rate of RDX Propellants, Kuldeep Prasad and Mitchell Smooke, Yale University, New Haven, CT
Tuesday, December 6, 1994

Session B-3: Soot Measurement and Analysis
Chairperson: M. Colket, UTRC

9:30  50. Spatial and Time Resolved Soot Volume Fraction Measurements in Methanol/Benzene Droplet Flames, S.B. Gupta, T. Ni and R.J. Santoro, Pennsylvania State University, University Park, PA


11:10 54. The Effects of Rapid Heating of Soot: Implications When Using Laser-Induced Incandescence for Soot Diagnostics, Randy L. Vander Wal, NASA-Lewis Research Center, Cleveland OH, Mun Young Choi and Kyeong-Ook Lee, University of Illinois at Chicago, Chicago, IL

11:30 55. Emission and Absorption Measurements for Soot Concentration in Diffusion Flames, Thomas Panagiotou and Yiannis Lekendis, Northeastern University, Boston, MA, and Michael Delichatsios, Factory Mutual, Norwood, MA

Tuesday, December 6, 1994

Session C-3: Chemical Kinetics II
Chairperson: W. Tsang, NIST


9:50  57. A Comparison of Intermediate and Low Temperature Acetaldehyde Oxidation at 10 atmospheres, D.C.Z. Zarubasak, T.J. Held and F.L. Dryer, Princeton University, Princeton, NJ

10:10 58. The Effect of NO Addition on Methanol Oxidation at 12.5 atm, 700-820 K, T.J. Held, C.V. Callahan and F.L. Dryer, Princeton University, Princeton, NJ


11:10 60. Experiment and Detailed Reaction Mechanism of Chlorinated Ethylene Formation and Destruction in Pyrolysis of CH₂Cl₂ and CH₂Cl₂/CH₄, Hong-Ming Chiang and Joseph W. Bozzelli, New Jersey Institute of Technology, Newark, NJ

11:30 61. Theoretical Study of the Gas Phase Structure, Thermochemistry and Decomposition Mechanisms of NH₂NO₂ and NH₄N(NO₂)₂(ADN), A.M. Mebel, M.C. Lin, K. Morokuma, Cherry L. Emerson, Emory University, Atlanta, GA, and C.F. Melius, Sandia National Laboratories, Livermore, CA

11:50 62. A Theoretical Study of H(D) + N₂O: Effects of Pressure, Temperature, and Quantum-Mechanical Tunneling on H(D)-Atom-Decay and OH(D)- Radical Production, Eric W.G. Diau and M.C. Lin, Emory University, Atlanta, GA
Tuesday, December 6, 1994

Session A-4: Pollution Control and Waste Incineration
Chairperson: F. Egolfopoulos, University of Southern California

2:30 63. Flame Dynamics and Nitrogen Kinetics, Fokion N. Egolfopoulos, University of Southern California, Los Angeles, CA

2:50 64. The Effect of Fuel Composition on Nitrogen Release During Black Liquor Pyrolysis, Denise M. Martin and Earl W. Malcolm, Institute of Paper Science and Technology, Atlanta, GA, and Mikko Hupa, Åbo Akademi University, Turku, Finland

3:10 65. The Effect of Incomplete Fuel-Air Mixing on the Lean Blowout Limit, Lean Stability Limit and NOx Emissions of Lean Premixed Gas Turbine Combustors, Weng-Ping Shih, Jongguen Lee and Domenic A. Santavicca, Pennsylvania State University, University Park, PA


4:50 69. Combustion of Ground Waste Tires, Ajay Atal and Yiannis A. Levendis, Northeastern University, Boston, MA
Tuesday, December 6, 1994
Session C-4: Numerical Methods / Sprays and Droplets
Chairperson: K. Kailasamath, NRL

2:30 75. Parallel Computation of Laminar Diffusion Flames, Alexander Ern, Mitchell D. Smooke, Yale University, New Haven, CT, and Craig C. Douglas, IBM Research Division, Yorktown Heights, NY


3:10 77. Fast and Accurate Algorithms for Evaluating Multi-Component Transport Coefficients, Alexandre Ern, Yale University, New Haven, CT and Vincent Giovangigli, Ecole Polytechnique, Palaiseau Cedex, France

3:50 78. Imposed Radiation Effects on Flame Spread over Black PMMA in Low Gravity, S.L. Olson, NASA Lewis Research Center, Cleveland, OH, and U. Hegde, Nyma Inc., Cleveland, OH


Wednesday, December 7, 1994
Session A-5: Fire and Flame Spread, Suppression and Inhibition
Chairperson: M. A. Delichatsios, Factory Mutual Research Corporation

9:30 82. Ignition and Wind Effects on the Transition to Flame Spread in a Microgravity Environment, Kevin B. McGrattan, Takashi Kashiwagi, Howard R. Baum, NIST, Gaithersburg, MD, and Sandra L. Olson, NASA Lewis Research Center, Cleveland, OH

9:50 83. Horizontal and Lateral Flame Spread on Solids: Closure and Diffusionless Lewis Number Effects, M.A. Delichatsios, Factory Mutual Research Corporation, Norwood, MA, and P.D. Ronney, USC, Los Angeles, CA


11:30 87. Experimental and Numerical Burning Rates of Premixed Methane-Air Flames Inhibited by Fluoromethanes, G.T. Linters, NIST, Gaithersburg, MD, and L. Truett, Wright-Patterson AFB, Dayton, OH

Wednesday, December 7, 1994

Session B-5: Turbulent and Pulsed Combustion
Chairperson: J. F. Driscoll, University of Michigan

9:30  89. Large Eddy Simulation of Reacting Turbulent Flows, S.C. Garrick, R.S. Miller and P. Givi, State University of New York at Buffalo, Buffalo, NY

9:50  90. Images of the Strained Flammable Layer Used to Study the Liftoff of Turbulent Jet Flames, D. Everest, D. Feikema and J.F. Driscoll, University of Michigan, Ann Arbor, MI

10:00 91. Conditional Expectations in Turbulent Scalar Mixing and Reaction, F.A. Jaberi, R.S. Miller and P. Givi, State University of New York at Buffalo, Buffalo, NY

10:50 92. Effect of Fuel Composition on Pulse Combustor Performance, S.M. Poth Jr., L. Rosen, J.J. Jagoda and B.T. Zinn, Georgia Institute of Technology, Atlanta, GA

11:10 93. Combustion of a “Pulsed” Jet Flame Surrounded by a Shroud of Combustion Air, P.X. Tran, M.P. Mathur and J.M. Ekmann, Pittsburgh Energy Technology Center, Pittsburgh, PA

11:30 94. Measured Lengths of Supersonic Hydrogen-Air Jet Flames – Compared to Subsonic Flame Lengths and Analysis, James F. Driscoll, Hwanil Huh, Younghim Yoon and Jeffrey Donbar, University of Michigan, Ann Arbor, MI

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Wednesday, December 7, 1994

Session C-5: Chemical Kinetics III
Chairperson: A. Fontijn, RPI

9:30  95. Thermal Oxidation of HCN by NO2 at High Temperatures, A. Grant Thaxton, Eric W.G. Diao, M.C. Lin, Emory University, Atlanta, GA, C.Y. Lin, The Catholic University of America, Washington, DC, and C.F. Melius, Sandia National Laboratories, Livermore, CA

9:50  96. Negative Temperature Coefficient Behavior of Chlorinated Hydrocarbons, John J. Bloomer and David L. Miller, Drexel University, Philadelphia, PA

10:10 97. On the Kinetics of Vinyl + O2, Phillip R. Westmoreland and Daniel J. Hennessey, University of Massachusetts, Amherst, MA

10:50 98. Rate Constant Determinations for HBO + F Channels from Ab Initio Reaction Path Calculations, Maribel R. Soto, Naval Research Laboratory, Washington, DC

11:10 99. Qualitative Kinetic Considerations of Automotive Knock, Irvin Glassman, Princeton University, Princeton, NJ

11:30 100. A Flow Reactor Study of the Oxidation of Blends of Toluene and Various C4 Species, S. Klotz, K. Brezinsky, I. Glassman, Princeton University, Princeton, NJ, and P.J. Bennett, BP Oil, Middlesex, UK

11:50 101. Higher Hydrocarbon Formation During Benzene Pyrolysis, J. Miltovska and L.D. Pfefferle, Yale University, New Haven, CT