

The Eastern States Section of The Combustion Institute

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Schedule
Fall Technical Meeting of the Eastern States Section of the Combustion Institute
Adele H. Stamp Union Building
University of Maryland
October 18-21, 2009

Sunday, October 18, 2009	03:00–05:00	Eastern States Executive Committee Meeting
	06:00–08:30	Registration and Welcome Reception
Monday, October 19, 2009	08:15	Welcome Remarks (Carroll room)
	08:30	Invited Speaker: Marshall Long, Yale University <i>Imaging Flames: From advanced laser diagnostics to snapshots.</i> (Carroll room)
	09:30	Sessions A-1; B-1; C-1 (Carroll, Prince George, Jimenez rooms)
	10:10	Break
	12:10	Lunch
	01:30	Invited Speaker: Timothy Lieuwen , Georgia Institute of Technology <i>Dynamics of Acoustically Excited, Premixed Flames.</i> (Carroll room)
	02:30	Session A-2; B-2; C-2 (Carroll, Prince George, Jimenez rooms)
	03:10	Break
	05:10	General Business Meeting (Carroll room)
	06:30	Reception
Tuesday, October 20, 2009	08:30	Invited Speaker: Edward Dreizin, New Jersey Institute of Technology <i>Ignition kinetics and burn rates of Al particles.</i> (Carroll room)
	09:30	Sessions A-3; B-3; C-3 (Carroll, Banneker, Jimenez rooms)
	10:10	Break
	12:10	Lunch
	01:30	Invited Speaker: Wing Tsang, NIST, <i>Combustion Kinetics of Real Fuels.</i> (Carroll room)
	02:30	Session A-4; B-4; C-4 (Carroll, Banneker, Jimenez rooms)
	03:10	Break
	05:30	Adjourn
Wednesday, Oct. 21, 2009	08:30	Invited Speaker: Thomas Bussing, DARPA, <i>Vulcan Program.</i> (Carroll room)
	09:30	Sessions A-5; B-5; C-5 (Carroll, Banneker, Jimenez rooms)
	10:10	Break
	12:10	Adjourn

**2009 FALL TECHNICAL MEETING
EASTERN STATES SECTIONS OF THE COMBUSTION INSTITUTE
University of Maryland
Monday, October 19, 2009**

8:00 **Registration** (Grand Ballroom Lounge)
8:15 **Welcome Remarks: Dr. Darryll Pines, Professor and Dean, A.J. Clark School of Engineering, University of Maryland**
8:30 **Invited Speaker: Marshall Long, Yale University**
Imaging Flames: From advanced laser diagnostics to snapshots. (Carroll room)
Announcements: Arnaud Trouvé, University of Maryland

	A-1: Turbulent I (Carroll) Session Chair: Prof. Saveliev	B-1: Laminar (Prince George) Session Chair: Prof. Jackson	C-1: Fire Research (Jimenez) Session Chair: Dr. Pitts
9:30	A-01 A practical application of the bode criterion for prediction of thermoacoustic combustion instabilities. <i>Joseph A. Ranalli, Christopher R. Martin, Uri Vandsburger Virginia Tech</i>	B-01 Flame propagation and counterflow nonpremixed ignition of mixtures of methane and ethylene. <i>W. Liu, A. P. Kelley, C. K. Law Princeton University</i>	C-01 Convective heat transfer scaling of ignition delay and burning rate with heat flux and stretch rate in the equivalent low stretch apparatus. <i>S. L. Olson NASA Glenn Research Center</i>
9:50	A-02 An algorithm for accurate prediction of turbulent burning velocity for under-resolved premixed flames. <i>Hossam El-Asrag, Jean-Christophe Nave, Ahmed Ghoniem Massachusetts Institute of Technology</i>	B-02 Mechanism of fast flame acceleration in cylindrical tubes with obstacles. <i>V. B. Akkerman¹, C. K. Law¹, D. M. Valiev², V. V. Bychkov², L. E. Eriksson³ ¹Princeton University ²Umea University ³Chalmers University</i>	C-02 Design considerations for a ground-based flammability test method for screening spacecraft materials. <i>George Sidebotham¹, Sandra Olson² ¹The Cooper Union ²NASA Glenn Research Center</i>
10:10	BREAK		

<p>10:30</p>	<p>A-03 Prediction of emissions using RANS: simulation of lean premixed methane air flames in swirl stabilized combustor. <i>Jagannath Nanduri¹, Don Parsons¹, Ismail Celik¹, P. A. Strakey²</i> ¹West Virginia University ²National Energy Technology Laboratory</p>	<p>B-03 The effect of compressibility on flame acceleration in tubes. <i>V. B. Akkerman¹, C. K. Law¹, V. V. Bychkov², D. M. Valiev²</i> ¹Princeton University ²Umea University</p>	<p>C-03 Fire spread and growth on flexible polyurethane foam. <i>William M. Pitts, Gregory Hasapis, Patrick Macatangga</i> National Institute of Standards and Technology</p>
<p>10:50</p>	<p>A-04 Analytical modeling of spatial phenomena dictating the frequency response of turbulent premixed flames. <i>C. Martin, J. Ranalli, U. Vandsburger</i> Virginia Tech</p>	<p>B-04 A new model for flame kernel formation and propagation of methane-air premixed mixtures. <i>Kian Eisazadeh Far¹, Hameed Metghalchi¹, James C. Keck²</i> ¹Northeastern University ²Massachusetts Institute of Technology</p>	<p>C-04 Development of tools for smoke residue and deposition analysis. <i>Siamak Riahi^{1,2}, Craig Beyler¹, Judith Hartman³, Kim Roddis²</i> ¹Hughes Associates ²George Washington University ³United States Naval Academy</p>
<p>11:10</p>	<p>A-05 An assessment of SGS turbulent combustion models in predicting emissions from lean premixed methane/air flames. <i>Jagannath Nanduri¹, Ismail Celik¹, Peter Strakey²</i> ¹West Virginia University ²National Energy Technology Laboratory</p>	<p>B-05 Effects of hydrogen addition on spherically expanding <i>n</i>-butane flames. <i>Chenglong Tang, Yuyang Li, Zuohua Huang, C K. Law</i> Princeton University</p>	<p>C-05 An examination of Cross Correlation Velocimetry's ability to predict characteristic turbulent length scales in fire induced flow. <i>Scott Rockwell, Ali Rangwala, Andy Klein</i> Worcester Polytechnic Institute</p>
<p>11:30</p>	<p>A-06 Glycerol combustion and emissions. <i>Myles D. Bohon, Brian Metzger, William L. Roberts</i> North Carolina State University</p>	<p>B-06 A fully coupled, compact finite difference method for the numerical solution of time-dependent flames. <i>Richard R. Dobbins, Mitchell D. Smooke</i> Yale University</p>	<p>C-06 Performance evaluation criteria of fire blanket materials for structure protection in wildland-urban interface fires. <i>Fumiaki Takahashi¹, Timothy M. Murray¹, Amber Abbott¹, Sheng-Yen Hsu¹, James S. T'ien¹, Sandra L. Olson²</i> ¹Case Western Reserve University ²NASA Glenn Research Center</p>
<p>11:50</p>	<p>A-07 Understanding blowoff dynamics of bluff body stabilized turbulent flames in a prototypical combustor. <i>Swetaprovo Chaudhuri, Stanislav Kostka, Steven Tuttle, Michael Renfro, Baki Cetegen</i> University of Connecticut</p>	<p>B-07 Computational and experimental study of an axisymmetric laminar coflow <i>n</i>-heptane flame. <i>Beth Anne V. Bennett, Charles S. McEnally, Lisa D. Pfefferle, Mitchell D. Smooke</i> Yale University</p>	<p>C-07 Scaling techniques for fire forensics. <i>C. Chan¹, A. Carey¹, T. Layton¹, A.W. Marshall¹, J.G. Quintiere¹, D.T. Sheppard²</i> ¹University of Maryland ²ATF Fire Research Laboratory</p>

12:10	LUNCH		
1:30	Invited Speaker: Timothy Lieuwen, Georgia Institute of Technology <i>Dynamics of Acoustically Excited, Premixed Flames.</i> (Carroll room)		
	Session A-2: Spray (Carroll) Session Chair: Prof. Oehlschlaeger	Session B-2: Soot (Prince George) Session Chair: Dr. Bennett	Session C-2: Heterogeneous (Banneker B) Session Chair: Prof. Fang
2:30	A-08 Instantaneous and time-resolved blowoff transition measurements for two-dimensional bluff body-stabilized flames in vitiated flow. <i>Steven G. Tuttle, Stanislav Kostka Jr., Swetaprovo Chaudhuri, Marat Kulakhmetov, Baki M. Cetegen, Michael W. Renfro</i> <i>University of Connecticut</i>	B-08 Impact of intake oxygen enrichment in a diesel engine on the crystalline structure and oxidative reactivity of diesel soot. <i>Hee Je Seong, Andre L. Boehman</i> <i>The Pennsylvania State University</i>	C-08 Initiation of transient ion emission by nanocomposite thermite reactions. <i>Lei Zhou¹, Nicholas Piekietl¹, Snehaunshu Chowdhury¹, Michael R. Zachariah¹, Donggeun Lee²</i> ¹ <i>University of Maryland, College Park</i> ² <i>Pusan National University</i>
2:50	A-09 Atomization of a superheated jet fuel. <i>J. Lee¹, M. Corn¹, C. Fotache¹, S. Gopalakrishnan², D. Schmidt²</i> ¹ <i>United Technologies Research Center UTC</i> ² <i>University of Massachusetts Amherst</i>	B-09 Examination of sooting tendency of three ring aromatic hydrocarbons and their saturated counterparts. <i>Eduardo J. Barrientos, Andre L. Boehman</i> <i>The Pennsylvania State University</i>	C-09 Simultaneous pressure and optical measurements of nanoaluminum-based thermites: An investigation of the reaction mechanism. <i>Kyle Sullivan, Michael Zachariah</i> <i>University of Maryland at College Park</i>
3:10	BREAK		
3:30	A-10 Modeling and experimental study of pure and blended bio-fuel droplets injected into hot stream of air. <i>A. Saha, R. Clapp, R. Kumar, S. Basu</i> <i>University of Central Florida</i>	B-10 Classification of ignition regimes in HCCI combustion using computational singular perturbation. <i>Saurabh Gupta¹, Hong G. Im¹, Mauro Valorani²</i> ¹ <i>University of Michigan</i> ² <i>University of Rome "La Sapienza"</i>	C-10 Catalytic combustion of ethanol and butanol for microburner applications. <i>Ivan C. Lee, Douglas A. Behrens, C. Michael Waits</i> <i>US Army Research Laboratory</i>

3:50	<p>A-11 Autoignition behavior of surrogate gasoline fuels during spray combustion in a constant-volume chamber. <i>Peter L. Perez, Andre L. Boehman</i> <i>The Pennsylvania State University</i></p>	<p>B-11 Laminar Smoke Points of Microgravity Coflow Diffusion Flames. <i>K.T. Dotson, P.B. Sunderland, Z.-G. Yuan, D.L. Urban</i> <i>University of Maryland</i></p>	<p>C-11 Time-resolved mass spectrometry of nanocomposite thermite reactions. <i>Lei Zhou, Nicholas Piekiel, Snehaunshu Chowdhury, Kyle Sullivan, Michael R. Zachariah</i> <i>University of Maryland Park</i></p>
4:10	<p>A-12 Modeling the effect of multi-component fuel evaporation on combustion kinetics. <i>R. Joklik, Combustion Science & Engineering, Inc.</i></p>	<p>B-12 Reactivity and nanostructure of diesel soot generated by a compression ignition engine using biodiesel, Fischer-Tropsch and ultra low sulfur diesel fuels. <i>Kuen Yehliu, Randy Vander Wal, André L. Boehman</i> <i>The Pennsylvania State University</i></p>	<p>C-12 Ignition of aluminum powders by electro-static discharge. <i>Ervin Beloni, Edward L. Dreizin</i> <i>New Jersey Institute of Technology</i></p>
4:30	<p>A-13 Droplet evaporation due to gas-phase volumetric compression. <i>Michael V. Johnson¹, Scott Goldsborough¹, Suresh Aggarwal²</i> ¹Marquette University ²University of Illinois Chicago</p>	<p>B-13 Particle transport and instrument calibration for particulate matter measurements of aircraft emissions. <i>D. Liscinsky¹, A. Bhargava², B. Anderson³, E. Winstead³</i> ¹United Technologies Research Center ²Pratt and Whitney ³NASA Langley Research Center</p>	<p>C-13 Characterization of fine aluminum powder coated with nickel as a potential fuel additive. <i>Shashank L. Vummidi, Yasmine Aly, Mirko Schoenitz, Edward L. Dreizin</i> <i>New Jersey Institute of Technology</i></p>
4:50	<p>A-14 Collision dynamics and mixing of unequal-size droplets. <i>Dong Liu¹, Peng Zhang¹, Chung K. Law¹, Yincheng Guo²</i> ¹Princeton University ²Tsinghua University</p>	<p>B-14 Effects of m-xylene addition on soot in laminar, N₂-diluted ethylene diffusion flames at pressures from 1 to 5 atm. <i>A.V. Menon, M. J. Linevsky, T. A. Litzinger, R. J. Santoro</i> <i>The Pennsylvania State University</i></p>	<p>C-14 Ignition and waste heat recovery through catalytic combustion of reformat exhaust in PEM fuel cell systems. <i>Ian M. Young¹, Atul Bhargav¹, Gregory S. Jackson¹, C.J. Testuk², G.W. Brunson, W.A. Whittenberger³</i> ¹University of Maryland ²Ballard Power Systems ³Catapel Corporation</p>
<p>5:00 GENERAL BUSINESS MEETING (Carroll room)</p>			
<p>6:00 RECEPTION – Hall of Fame of the Riggs Alumni Center</p>			

Tuesday, October 20, 2009

8:30

Invited Speaker: Edward Dreizin, New Jersey Institute of Technology
Ignition kinetics and burn rates of Al particles. (Carroll room)

	Session A-3: Reaction Kinetics I (Carroll) Session Chair: Prof. Goldsborough	Session B-3 : IC Engines (Banneker) Session Chair: Prof. Cadou	Session C-3: Detonations (Jimenez) Session Chair: Prof. Renfro
9:30	<p>A-15 Size-resolved reaction kinetics and reaction rate anisotropy of unsupported Zn nanocrystals. <i>Xiaofei Ma, Michael R. Zachariah</i> <i>University of Maryland-College Park</i></p>	<p>B-15 Numerical study on the effect of CH₄ addition to H₂ flames flashback. <i>Nasser Shelil, A.J. Griffiths, N. Syred</i> <i>Cardiff University, United Kingdom</i></p>	<p>C-15 On the fluid dynamics of acoustically perturbed swirling non-premixed flames. <i>Uyi Idahosa, Navid Khatami, Abhishek Saha,</i> <i>Chengying Xu, Saptarshi Basu</i> <i>University of Central Florida</i></p>
9:50	<p>A-16 A fitting formula for the falloff curves of unimolecular reactions with tunneling. <i>Peng Zhang, Chung K. Law</i> <i>Princeton University</i></p>	<p>B-16 Additive effects on ignition and combustion characteristics of natural gas. <i>S.B. Gupta, B. Bihari, M.V. Johnson</i> <i>Argonne National Laboratory</i></p>	<p>C-16 Assessment of syngas kinetic models for the prediction of a turbulent nonpremixed flame. <i>Osama A. Marzouk, E. David Huckaby</i> <i>U.S. Department of Energy</i></p>
10:10	BREAK		
10:30	<p>A-17 Thermal decomposition of HN₃. <i>Vadim D. Knyazev¹, Oleg P. Korobeinichev²</i> <i>¹The Catholic University of America</i> <i>²Institute of Chemical Kinetics and Combustion</i></p>	<p>B-17 Soot visualization in an optical diesel engine fueled with diesel and bio-diesel fuels using multiple injection strategies. <i>Tiegang Fang¹, Chia-fon Lee²</i> <i>¹North Carolina State University</i> <i>²University of Illinois at Urbana-Champaign</i></p>	<p>C-17 Laser-initiated, microwave driven ignition in methane/air mixtures. <i>J. B. Michael, A. Dogariu, M. N. Shneider,</i> <i>R. B. Miles</i> <i>Princeton University</i></p>

10:50	<p>A-18 Ignition delay in combustion of ethylene: A shock tube study. <i>Saamitra Saxena¹, M.S.P. Kahandawala¹, S.S. Sidhu¹, Hai Wang²</i> ¹University of Dayton Research Institute ²University of Southern California</p>	<p>B-18 An experimental investigation of H₂ emissions of a heavy-duty H₂-diesel dual fuel engine. <i>T. Gatts, C. M. Liew, S. Liu, H. Li, T. Spencer, N. Clark</i> West Virginia University</p>	<p>C-18 Performance studies of a pulse detonation rocket engine for use as an unsteady ejector in a rocket-based combined cycle engine. <i>Nicholas Mercurio, Sibtos Pal, Roger Woodward, Robert Santoro</i> The Pennsylvania State University</p>
11:10	<p>A-19 The role of chemical explosive mode in flames. <i>T.F. Lu¹, C.S. Yoo², J.H. Chen²</i> ¹University of Connecticut ²Sandia National Laboratories</p>	<p>B-19 An experimental investigation of NO₂ emission characteristics of a heavy-duty H₂-diesel dual fuel engine. <i>S. Liu, C. Liew, H. Li, T. Gatts, S. Wayne, B. Shade, N. Clark</i> West Virginia University</p>	<p>C-19 Simulation of rotating detonation engines. <i>Douglas A. Schwer, K. Kailasanath</i> Naval Research Laboratory</p>
11:30	<p>A-20 Kinetics of hydrogen abstraction reactions of monomethylhydrazine by OH radical. <i>Hongyan Sun, Chung K. Law</i> Princeton University</p>	<p>B-20 An experimental investigation of exhaust emissions of a 1999 Cummins ISM370 Diesel engine supplemented with H₂. <i>C. Liew¹, H. Li¹, T. Gatts¹, S. Liu¹, S. Xu¹, B. Rapp¹, B. Ralston¹, N. Clark¹, Y. Huang²</i> ¹West Virginia University ²Huston Advanced Research Center</p>	<p>C-20 Experimental investigation of gradient mechanism of detonation initiation. <i>A.Rakitin¹, A.Starikovskiy²</i> ¹NEQLab Research BV ²Drexel University</p>
11:50	<p>A-21 Laminar burning speeds of ethanol-air-diluent mixtures. <i>Kian Eisazadeh Far¹, Ali Moghaddas¹, Hameed Metghalchi¹, M.Molki²</i> ¹Northeastern University ²Damascus University</p>	<p>B-21 Effects of fuel composition, turbulence, and turbulence/chemistry interactions on emissions from compression-ignition engines. <i>Hedan Zhang, Greg Lilik, André Boehman, Daniel Haworth</i> The Pennsylvania State University</p>	<p>C-21 Simulations of flame acceleration and deflagration-to-detonation transitions in large-scale methane-air mixtures. <i>David A. Kessler, Vadim N. Gamezo, Elaine S. Oran</i> Naval Research Laboratory</p>
12:15	LUNCH		

1:30 Invited Speaker: Wing Tsang, NIST/DOC Combustion Kinetics of Real Fuels. (Carroll room)			
	Session A-4: Reaction Kinetics II (Carroll) Session Chair: Prof. Lu	Session B-4: Diagnostics & Stationary (Banneker) Session Chair: Dr. Nanduri	Session C-4: New Technology (Jimenez) Session Chair: Prof. Marshall
2:30	A-22 Iso-dodecane pyrolysis model development. <i>S. Zeppieri¹, M. Colket¹, M. Wójtowicz², M. Serio²</i> ¹ United Technologies Research Center ² Advanced Fuel Research, Inc.	B-22 Simultaneous water vapor and oxygen measurements in aqueous high expansion fire suppression foams using TDLAS. <i>Eric A. Fallows, James W. Fleming</i> <i>US Naval Research Laboratory</i>	C-22 Kinetics of OH radicals below self-ignition threshold in plasma enhanced combustion. <i>Andrey Nikipelov¹, Liang Wu², Jamie Lane², Irina N. Ciobanescu Husanu², Nicholas P. Cernansky², David L. Miller², Alexander A. Fridman², Andrey Yu. Starikovskiy²</i> ¹ Moscow Institute of Physics and Technology ² Drexel University
2:50	A-23 Quantum calculations of important isomerization reaction rates. <i>Sandeep Sharma¹, Sumathy Raman^{1,2}, William H. Green¹</i> ¹ Massachusetts Institute of Technology ² Exxon Mobil Research and Engineering	B-23 On use of OH* and CO₂* chemiluminescence for heat release rate measurement in diluted flames. <i>J.A. Ranalli¹, D. Ferguson¹, J. Escobar^{2,3}</i> ¹ National Energy Technology Lab ² West Virginia University ³ National Energy Technology Lab	C-23 The photo-induced ignition of quiescent fuel/air mixtures containing suspended carbon nanotubes. <i>Andrew M. Berkowitz, Matthew A. Oehlschlaeger</i> <i>Rensselaer Polytechnic Institute</i>
3:10	BREAK		
3:30	A-24 Elementary mechanism for gas phase mercury conversion in H₂, O₂, chloro and bromo C₁-hydrocarbon and NO_x combustion environments. <i>Itsaso Auzmendi Murua, Joseph W. Bozzelli</i> <i>New Jersey Institute of Technology</i>	B-24 A stabilized cool flame reactor for laser diagnostic studies of HO₂ and OH radicals at pre-ignition reaction conditions. <i>Jamie Lane, Nicholas Cernansky, David Miller</i> <i>Drexel University</i>	C-24 Testing and analysis of CO and O₂ emissions from CH₄/O₂/CO₂ flames. <i>A. Amato, R. Hudak, D. Noble, P. D'Carlo, D. Scarborough, J. Seitzman, T. Lieuwen</i> <i>Georgia Institute of Technology</i>

3:50	A-25 Thermochemistry and kinetic modeling for OH addition to ethylene and propene and subsequent hydroxyethyl radical + O₂ reactions in atmospheric chemistry. <i>Suarwee Snitsiriwat, Gabriel da Silva, Joseph W. Bozzelli</i> <i>New Jersey Institute of Technology</i>	B-25 Flame structure of non-forced acoustically driven flames using proper orthogonal decomposition. <i>Kristin M. Kopp-Vaughan, Michael W. Renfro</i> <i>University of Connecticut</i>	C-25 Empirical investigation of operable fuels for micropulsejets. <i>S.A. Steinmetz¹, F. Zheng¹, J.A. Scroggins¹, N.L. Cousineau¹, J.S. Sayres¹, T.L. Turner², W.L. Roberts¹</i> <i>¹North Carolina State University ²Permafuels, Inc.</i>
4:10	A-26 Low Temperature Oxidation of n-Butylcyclohexane. <i>Robert H. Natelson, Matthew S. Kurman, Nicholas P. Cernansky, David L. Miller</i> <i>Drexel University</i>	B-26 Limitations and improvements to an FT-IR based non-intrusive diagnostic technique for making temperature measurements. <i>Anand Veeraragavan, Chris Cadou</i> <i>University of Maryland</i>	C-26 Investigation of bimodal nano/micron aluminum-ice (ALICE) propellants. <i>Terrence L. Connell, Jr.¹, Grant A. Risha¹, Richard A. Yetter¹, Vigor Yang², Steven F. Son³</i> <i>¹The Pennsylvania State University ²Georgia Institute of Technology ³Purdue University</i>
4:30	A-27 Decomposition of methylbenzyl radicals in the oxidation and pyrolysis of xylenes. <i>Gabriel da Silva¹, Joseph W Bozzelli²</i> <i>¹Univeristy Melbourne ²New Jersey Institute of Technology</i>	B-27 Separation Number Analysis™ applied to power boilers for assessing the process impacts of new coals and firing configurations. <i>Murray F. Abbott, Simon P. Hanson</i> <i>Fuel & Furnace Consulting, Inc</i>	C-27 Kinetics of plasma assisted combustion at low reduced electric fields. <i>Liang Wu, Alexander A. Fridman, A. Yu. Starikovskiy</i> <i>Drexel University</i>
4:50	A-28 Abstraction of allylic hydrogen of propene by alkyl radicals. Thermochemistry and kinetic study. <i>Anjani Gunturu, Joseph W. Bozzelli</i> <i>New Jersey Institute of Technology</i>	B-28 Pollutant emission from coal combustion with flue gas recycle. <i>Ning Wu, Liqin Zhang, Qiang Song, Qiang Yao, Shuiqing Li</i> <i>Tsinghua University</i>	C-28 Hydrocarbons to syngas reforming by high-voltage nanosecond pulse discharge. <i>A.Nikipelov¹, A.Rakitin², A.Starikovskiy³</i> <i>¹Moscow Institute of Physics and Technology ²NEQLab Research BV ³Drexel University</i>
5:10	A-29 Reaction pathways in hypergolic MMH/RFNA combustion. <i>Nicole Labbe¹, Phillip Westmoreland²</i> <i>¹University of Massachusetts, Amherst ²North Carolina State University</i>	B-29 Nitric oxide measurements during air-fired and oxy-fuel combustion of coal and coal/sawdust mixtures. <i>Scott A. Skeen, Ben M. Kumfer, Richard L. Axelbaum</i> <i>Washington University in St. Louis</i>	C-29 Ignition of a liquid fuel jet by electrical discharge propagating along the jet. <i>P. Gray, A.V. Saveliev</i> <i>North Carolina State University</i>
5:30 Adjoin for evening			

Wednesday, October 21, 2009

8:30

Invited Speaker: Thomas Bussing, DARPA
Vulcan Program. (Carroll room)

Session A-5: Reaction Kinetics &
Heterogeneous Combustion
(Carroll)
Session Chair: Prof. Basu

Session B-5: Soot & Other
(Banneker)
Session Chair: Prof. Sunderland

Session C-5: Laminar Flames II
(Jimenez)
Session Chair: Dr. Zeppieri

9:30

A-30 Propanol ignition at shock tube conditions.
*M.V. Johnson¹, S.S. Goldsborough¹, Z. Serinyel²,
P. O'Toole², E. Larkin², G. O'Malley², H.J. Curran²*
¹Marquette University
²National University of Ireland, Galway

B-30 Characterization of photo-ignition of single walled carbon nanotubes.
Matthew Loomis, Jongguen Lee, Richard Yetter
The Pennsylvania State University

C-30 Combustion of JP-8 surrogates and parent species in centerbody burner.
Viswanath Katta, William Roquemore
Wright-Patterson Air Force Base

9:50

A-31 Dihydrogen mediated hydrogen transfer reactions.
Rubik Asatryan, Joseph W. Bozzelli
New Jersey Institute of Technology

B-31 Reaction mechanism for hypergolic ignition of dicyanamide-based ionic Liquids.
Suresh S. Iyer, Thomas A. Litzinger
Penn State University

C-31 Asymptotic analysis of radiative extinction in laminar counterflow diffusion flames.
P. Narayanan, H. R. Baum, A. Trouvé
University of Maryland

10:10

BREAK

10:30

A-32 On the initiation of nanothermite reactions.
Snehaunshu Chowdhury, Kyle Sullivan,
Nicholas Piekiet, Lei Zhou, Michael R. Zachariah
University of Maryland

B-32 Impact of pressure on hydrocarbon emissions and soot formation in the combustion of ethylene: A shock tube study.
Saumitra Saxena, M.S.P. Kahandawala, S.S. Sidhu
University of Dayton Research Institute

C-32 Response of premixed swirling flames to transverse excitation.
Vishal Acharya, Shreekrishna, Dong-hyuk Shin,
Tim Lieuwen
Georgia Institute of Technology

<p>10:50</p>	<p>A-33 Influence of reactant fuel class on the flame synthesis of carbon nanostructures. <i>Brendan Hall¹, Chuanwei Zhuo¹, Yiannis A. Levendis¹, Henning Richter²</i> ¹Northeastern University ²Nano-C</p>	<p>B-33 A computational analysis of soot precursor generation: propargyl chemistry and permanently blue flames at high Z_{st}. <i>Scott A. Skeen, Gregory Yablonsky, Richard L. Axelbaum</i> Washington University in St. Louis</p>	<p>C-33 Development of a wick-fed diffusion flame burner for liquid hydrocarbon fuels. <i>Venkatesh R. Iyer, Suresh S. Iyer, Milton J. Linevsky, Thomas A. Litzinger, Robert J. Santoro</i> The Pennsylvania State University</p>
<p>11:10</p>	<p>A-34 Flame synthesis of metal oxide nanorods. <i>W. Merchan-Merchan¹, A.V. Saveliev², M. Desai¹</i> ¹University of Oklahoma ²North Carolina State University</p>	<p>B-34 Numerical simulations of soot kinetics in spherical diffusion flames. <i>V.R. Lecoustre¹, P.B. Sunderland¹, B.H. Chao², R.L. Axelbaum³</i> ¹University of Maryland ²University of Hawaii ³ Washington University in St. Louis</p>	<p>C-34 Experimental and computational investigation of flow effects on local extinction strain rate of ethylene- and methane-air counterflow diffusion flames. <i>B.Sarnacki¹, G.Esposito¹, V.Katta², R. Krauss¹, H.Chelliah¹</i> ¹University of Virginia ²Innovative Scientific Solutions Inc.</p>
<p>11:30</p>	<p>A-35 Temporally analyzed multi-wavelength pyrometry of an Al/CuO nanothermite. <i>Michael R. Weismiller, Jongguen Lee, Richard A. Yetter</i> The Pennsylvania State University</p>	<p>B-35 Performance scaling in miniature internal combustion engines. <i>Shyam Menon, Chris Cadou</i> University of Maryland</p>	<p>C-35 Numerical modeling of axisymmetric coflow flames using a parallel Newton-based solver. <i>Luca Tosatto, Beth Anne V. Bennett, Mitchell Smooke</i> Yale University</p>

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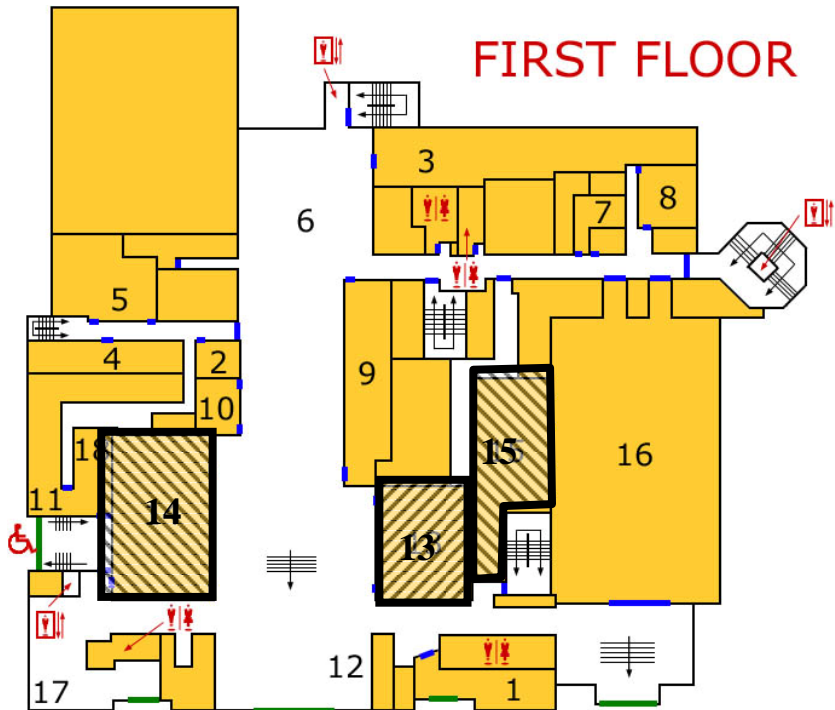
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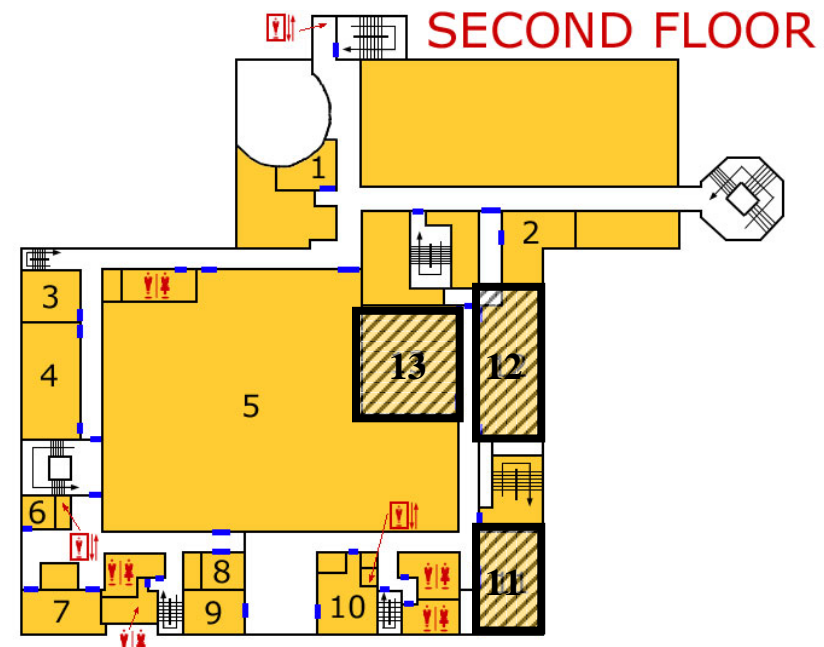
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Adele H. Stamp Student Union Building – Floor Plan

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|-----------------------|---------------|------|-------------------|
| Wheelchair Accessible | Elevator | Door | Construction Area |
| Restroom | Public Phones | Exit | Stairs |
- | | |
|--------------------------------------|---|
| 1 - The Coffee Bar | 10 - Piscataway Room |
| 2 - Community Service-Learning | 11 - Off Campus Housing |
| 3 - Adele's | 12 - Information Desk |
| 4 - Graduate Student Suite | 13 - Prince George's Room |
| 5 - Reservations Office | 14 - The Atrium |
| 6 - North Court | 15 - Grand Ballroom Lounge |
| 7 - Undergraduate/Graduate Legal Aid | 16 - Grand Ballroom |
| 8 - Nanticoke Room | 17 - Reading Room |
| 9 - Union Gallery | 18 - Office of Fraternity & Sorority Life |



- | | | | |
|-----------------------|---------------|------|-------------------|
| Wheelchair Accessible | Elevator | Door | Construction Area |
| Restroom | Public Phones | Exit | Stairs |
- | | |
|----------------------------|-----------------------------|
| 1 - IT Services | 8 - Edgar Allen Poe Room |
| 2 - Audio Visual Support | 9 - Calvert Room |
| 3 - Thurgood Marshall Room | 10 - Crossland Room |
| 4 - Margaret Brent Room | 11 - Jimenez Room |
| 5 - Colony Ballroom | 12 - Benjamin Banneker Room |
| 6 - Harriet Tubman | 13 - Charles Carroll Room |
| 7 - Pyon Su Room | |

University of Maryland at College Park – Campus Map

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