

# Jet/Rocket Fuel Kinetics Experiments and Model Development 2015

Dr. Chiping Li | April 30 – May 1, 2015 | Arlington, VA

Basic Research Innovation and Collaboration Center (BRICC)  
4075 Wilson Blvd., Suite 350 | Liberty Room  
Arlington, VA 22203

## Day 1 – April 30, 2015

Time	Title	Speaker
8:00-8:25	Registration	
<b>Day 1 - Problem Definitions (1) (Chair: Fokion N. Egolfopoulos)</b>		
8:25-8:30	Announcements	
8:30-8:45	Welcome Remarks and Workshop Objectives	Fokion N. Egolfopoulos (USC) & Chiping Li (AFOSR)
8:45-9:15	Overview of Modeling Approaches	Hai Wang (Stanford University)
9:15-9:30	Jet Fuels of Interest	Tim Edwards (AFRL Wright-Patterson)
9:30-9:45	Rocket Propulsion Fuels of Interest	Matthew Billingsley (AFRL Edwards)
9:45-10:15	<b>BREAK</b>	
10:15-10:45	Thermodynamic Properties: Capabilities and Database	Tom Bruno (NIST Boulder)
10:45-11:15	Thermodynamic and Flow Conditions of Turbine Engines of Relevance to Combustion Chemistry	Anthony Dean (GE GRC Niskayuna)
11:15-11:45	Impact of Detailed Chemical Kinetics on Rocket Combustion Dynamics	Venke Sankaran (AFRL Edwards)
11:45-12:15	Proposed Model Development and Test Targets	Hai Wang (Stanford University)
12:15-1:30	<b>LUNCH</b>	
<b>Day 1 – Problem Definitions (2) (Chair: Guillaume Blanquart)</b>		
1:30-2:30	Open Discussion: Proposed Model Targets	<b>Discussion lead:</b> Matthew Billingsley (AFRL Edwards)
2:30-2:50	Local Thermodynamic and Time-flow History in Turbine Combustors	Matthias Ihme (Stanford University)
2:50-3:10	<b>BREAK</b>	

<b>3:10-3:30</b>	NTC Chemistry in Advanced Turbines	Med Colket (UTRC, Retired)
<b>3:30-3:50</b>	Time Scales of NTC as a Function of Fuel, Pressure, and Temperature	Matt Oehlschlaeger (Rensselaer Polytechnic Institute)
<b>3:50-4:10</b>	Focusing on what is Important in Low-Temperature Ignition Chemistry	Bill Green (MIT)
<b>4:10-5:00</b>	Open Discussion: NTC Chemistry and its Relevance to Turbine Combustors	<b>Discussion lead:</b> Guillaume Blanquart (Caltech)
<b>5:00</b>	<b>MEETING ADJOURNED FOR THE DAY</b>	

<b>Day 2 – May 1, 2015</b>		
<b>Time</b>	<b>Title</b>	<b>Speaker</b>
<b>7:30-8:00</b>	<b>Registration</b>	
<b>Day 2 – Experimental Methods (1) (Chair: Hai Wang)</b>		
<b>8:00-8:10</b>	Announcements	
<b>8:10-8:30</b>	Review of Shock Tube Experiments (1)	Ronald K. Hanson (Stanford University)
<b>8:30-8:50</b>	Review of Shock Tube Experiments (2)	Ken Brezinsky (University of Illinois at Chicago)
<b>8:50-9:10</b>	Review of Shock Tube Experiments (3)	Matt Oehlschlaeger (Rensselaer Polytechnic Institute)
<b>9:10-9:30</b>	Review of Shock Tube Experiments (4)	Eric Petersen (Texas A&M University)
<b>9:30-9:50</b>	Review of Flow Reactor Experiments (1)	Tom Bowman (Stanford University)
<b>9:50-10:10</b>	<b>BREAK</b>	
<b>10:10-10:30</b>	Review of Flow Reactor Experiments (2)	Fred Dryer (Princeton University)
<b>10:30-10:50</b>	Review of Flow Reactor Experiments (3)	Nick Cernansky (Drexel University)
<b>10:50-11:10</b>	Review of Flow Reactor Experiments (4)	Harsha Chelliah (University of Virginia)
<b>11:10-11:30</b>	Review of Jet Stirred Reactor Experiments (1)	Yiguang Ju (Princeton University)
<b>11:30-11:50</b>	Review of Jet Stirred Reactor Experiments (2)	Nils Hansen (Sandia National Laboratories)
<b>11:50-12:10</b>	Review of Synchrotron Photoionization Mass Spectrometry Experiments	Nils Hansen (Sandia National Laboratories)

<b>12:10-1:30</b>	<b>LUNCH</b>	
<b>Day 2 – Experimental Methods (2) (Chair: Harsha Chelliah)</b>		
<b>1:30-1:50</b>	Review of Laminar Flames Experiments (1)	Ed Law (Princeton University)
<b>1:50-2:10</b>	Review of Laminar Flames Experiments (2)	Yiguang Ju (Princeton University)
<b>2:10-2:30</b>	Review of Laminar Flames Experiments (3)	Fokion N. Egolfopoulos (USC)
<b>2:30-3:00</b>	Uncertainty Quantification	David A. Sheen (NIST)
<b>3:00-3:30</b>	<b>BREAK</b>	
<b>3:30-4:00</b>	Experimental Method Group Breakouts	
<b>4:00-4:30</b>	Group Summary	
<b>4:30-5:00</b>	Open Discussion and Concluding Remarks	Fokion N. Egolfopoulos (USC) & Chiping Li (AFOSR)
<b>5:00</b>	<b>MEETING ADJOURNED</b>	