

# 2024 Propulsion and Power Portfolio Overview

Dr. Justin Koo | November 18-19, 2024 | Arlington, VA -hybrid

Basic Research Innovation Collaboration Center (BRICC)  
4100 N Fairfax Drive, Suite 450 | Arlington, VA 22203

## Agenda Day 1 | Monday, November 18, 2024

Time	Topic	Speaker
0830-0900	Check-In	
0900-0910	Introductions / Around the Room	
0910-1000	Portfolio Overview / RF Molecular plasma CFE	Justin Koo (AFOSR)
1000-1030	ADD'L DISCUSSION/BREAK	
1030-1055	Ultrafast Electron Dynamics in a Chemically Reactive and Biased Inductive Plasma Source	Thomas Underwood (University of Texas)
1055-1120	RF Test Cell Canonical Focus Experiments: Ionization, Dissociation, and Recombination for Molecular Propellants: Nitrogen and Hydrogen	Kristina Lemmer (Western Michigan)
1120-1145	The Role of Donor Electrons in Electron Cyclotron Resonance Discharges	Benjamin Jorns (University of Michigan)
1145-1215	BREAK	
1215-1240	Innovative high-speed diagnostics and modeling for RF CFE basic science	Richard Wirz (Oregon State)
1240-1305	Exploring Energy Conversion and Transport in RF-Driven of Molecular Gas Plasmas through Modeling and Simulation	Deborah Levin (University of Illinois)
1305-1405	LUNCH	
1405-1430	Nonlinear phenomena in nonequilibrium molecular plasma flows	Justin Little (University of Washington)
1430-1455	Characterization of Molecular Species in a Helicon Source Representative of EP Device Plasma Conditions	Azer Yalin (Colorado State)
1455-1525	BREAK	
1525-1550	Investigation of waveform and circuit effects on RF-driven plasmas using fluid and kinetic models	Ken Hara (Stanford)
1550-1615	Computational Modeling of Pulsed Plasma Radio-Frequency Source in Molecular Gases	Laxminarayan Raja (University of Texas)
1615-1640	Low Pressure RF Plasmas in Molecular Gases for Aerospace Applications	Yevgeny Raitses (Princeton)

<b>1640-1700</b>	Day One Final thoughts	Justin Koo (AFOSR)
<b>1700</b>	REVIEW END FOR THE DAY	

<b>Agenda Day 2   Tuesday, November 19, 2024</b>		
<b>Time</b>	<b>Topic</b>	<b>Speaker</b>
<b>0830-0900</b>	<b>Check-In</b>	
<b>0900-0910</b>	Discussion on Kickoff Workshop Goals and Objectives	Justin Koo (AFOSR)
<b>0910-0925</b>	Microprez: SoA/Challenges for Surface Chemistry / complex plasma - thruster materials interactions	TC1: Underwood
<b>0925-0940</b>	Microprez: SoA/Challenges for Multi-species molecular plasma generation and transport	TC2: Wirz
<b>0940-0955</b>	Microprez: SoA/Challenges for RF Plasma Modeli	TC3: Hara
<b>0955-1130</b>	Devolved discussion - overlooked challenges, opportunities and approaches	<group>
<b>1130-1200</b>	Outbriefs	TC
<b>1200-1330</b>	<b>LUNCH</b>	
<b>1330-1400</b>	Optional Security Briefing (US citizens only)	
<b>1400-1430</b>	AFRL/RQRS Activities and Concerns	Christine Greve (AFRL/RQRS)
<b>1430-1500</b>	Strategic Planning	Nackim Kamin (AF/CTIO)
<b>1500</b>	<b>END OFFICIAL SCHEDULE</b>	
<b>1500-1700</b>	Open collaboration / Informal discussion if desired; BRICC closes promptly at 5 pm	
<b>1500-1530</b>	Parallel Gov't only Caucus if required	