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Day 1 - Tuesday, November 5, 2019												
7.30 am	Registration/Continental Breakfast - Vienna A Foyer											
8.30 am	General Session - Vienna B											
8.30 am	Welcome and Introduction, University of Central Florida											
8.55 am	Opening Remarks – Richard Dennis, Turbine Technology Manager, NETL											
9.00 am	Keynote speech: Overview of DOE Advanced Turbines Program- Richard Dennis, Turbine Technology Manager, NETL											
9.30am	Keynote Speech:											
10.15 am	AM Break -Vienna A Foyer											
10.45 am	Panel Discussion:Vienna B											
12.00 pm	Lunch -Vienna B											
1.30 pm	Keynote Speech:											
2.15 pm	Change room											
	Track A - Combustion (Day 1 & 2) and Pressure Gain Combustion (Day 2 & 3) - Vienna B				Track B - Aero and Heat Transfer (Day 1) and Super Critical CO_2 (Day 2 & 3)-Normandy A				Track C - Materials (Day 1) and CMC & AM (Day 2 & 3)- Normandy B			
	Moderators: Mark Freeman and Donald Ferguson				Moderators: Robin Ames and Seth Lawson				Moderators: Rin Burke and Richard Dalton			
	Organization	Title	Presenter		Organization	Title	Presenter		Organization	Title	Presenter	
2.35 pm	GE	Advanced Multi-Tube Mixer Combustion for 65% Efficiency	Michael Hughes		GE	Turbine Aero-Thermal Technologies for 65% Combined Cycle Efficiency	Joe Weber		Siemens Energy	Design and Development of Low Weight, Titanium Aluminide Airfoils for High Performance Industrial Gas Turbines Meeting 65% Combined Cycle Efficiency	Sam Miller	
3.05 pm	Georgia Tech	High-Frequency Transverse Combustion Instabilities in Low-NOx Gas Turbines	Tim Lieuwen		Purdue University	Bulk Temperature, Adiabatic-Wall Temperature, and Heat-Transfer Coefficient -Revisited	Tom Shih		GE	High Temperature, High AN2 Last Stage Blade for 65% Combined Cycle Efficiency	John Delvaux	
3.35 pm	PM Break - Vienna A Foyer											
4.05 pm	Penn State University	Understanding Transient Combustion Phenomena in Low-NOx Gas Turbines	Jacqueline O'Connor		NETL-RIC	Film Cooling Experiments in the High Temperature High Pressure Test Facility	Jim Black/Doug Straub		Ohio State University	Development of High Performance Ni-Base Alloys for Gas Turbine Wheels Using a Coprecipitation Approach	Michael Mills	

4.35 pm	Embry Riddle	Improving NOx Entitlement with Axial Staging	Scott Martin		Ohio State University	Revolutionizing Turbine Cooling with Micro-Architectures Enabled by Direct Metal Laser Sintering	Jeffrey Bons		Georgia Tech	Real-Time Health Monitoring for Gas Turbine Components Using Online Learning and High Dimensional Data	Nagi Gebraeel
5.05 pm	Siemens Energy	Extension of Operating Envelope for an Extremely Low NOx Axial Stage Combustion System	Andrew North		Penn State University	Discrete Element Roughness Modeling for Design Optimization of Additively and Conventionally Manufactured Internal Turbine	Robert Kunz		UCF	In-situ Optical Monitoring of Operating Gas Turbine Blade Coatings Under Extreme Environments	Seetha Raghavan
5.45-7.00 pm	Poster Session Vienna A										

Day 2 - Wednesday, November 6, 2019											
7.30 am	Registration/Continental Breakfast - Vienna A Foyer										
8.30 am	General Session - Vienna B										
8.30 am	Keynote Speech:										
9.15 am	AM break - Vienna A Foyer										
9.45 am	Panel Discussion: Vienna B										
11.15 am	Lunch Talk - Vienna B: Penn State START Rig , Karen Thole										
	Track A - Combustion (Day 1 & 2) and Pressure Gain Combustion (Day 2 & 3) - Vienna B				Track B - Aero and Heat Transfer (Day 1) and Super Critical CO_2 (Day 2 & 3)-Nromandy A				Track C - Materials (Day 1) and CMC & AM (Day 2 & 3)- Normandy B		
	Moderators: Mark Freeman and Donald Ferguson				Moderators: Robin Ames and Seth Lawson				Moderators: Rin Burke and Richard Dalton		
	Organization	Title	Presenter		Organization	Title	Presenter		Organization	Title	Presenter
12.30 pm	Georgia Tech	High Temperature, Low NOx Combustor Concept Development	Tim Lieuwen		GE	Novel Modular Heat Engines with sCO_2 Bottoming Cycle Utilizing Advanced Oil-Free Turbomachinery	Bugra Ertas		GE	High Temperature Ceramic Matrix Composite (CMC) Nozzles for 65% Efficiency	John Delvaux
1.00 pm	GTI	Advanced Modular Sub-Atmospheric Hybrid Heat Engine	Yaroslav Chudnovsky		NETL-RIC	RIC FWP - Materials Research for Supercritical CO_2 Power Cycles	Omer Dogan		Siemens	Additive Manufactured Metallic-3D Ox-Ox CMC Integrated Structures for 65% Combined Cycle Efficiency	Ramesh Subramania n

1.30 pm	Bechtel	Turbocompound Reheat Gas Turbine Combined Cycle	S.C. (John) Gülen		GE	Low-Leakage Seals for Utility-Scale sCO_2 Turbines	Rahul Bidkar		UTRC	Hybrid Ceramic-CMC Vane with EBC for Future Coal Derived Syngas Fired Highly Efficient Turbine Based Combined Cycle	John Holowczak
2.00 pm	Combustion Research and Flow Technology, Inc.	Simulation Tool for Turbomachinery Operating with Trans-Critical Real Fluids	Ashvin Hosangadi		SwRI	Advanced Gas Turbine and sCO2 Combined Cycle Power System	Kevin Hoopes		ORNL	Next Generation Environmental Barrier Coating	Bruce Pint
2.30 pm	PM Break -Vienna A Foyer										
3.00 pm	GTI	Modular Heat Engine for Co-Production of H_2 Power and CO_2	Jeffrey Mays		CATER/UCF	Combustion Kinetics Model Development and Fluid Property Experimental Investigation for Improved Design of Supercritical CO2 Power Cycle Components	Subith Vasu		Clemson	Integrated TBC/EBC For SiC Fiber Reinforced SiC Matrix Composites for Next Generation Gas Turbines	Raj Bordia
3.30 pm	NETL-RIC	Overview of Rotating Detonation Combustion Study at NETL	Don Ferguson		Echogen	Integrated Optimization and Control of a Hybrid Gas Turbine/sCo2 Power System	Tim Held		Penn State	Development of Additive Manufacturing for Ceramic Matrix Composite Vanes	Steve Lynch
4.00 pm	University of Michigan	A Joint Experimental/Computational Study of Non-Idealities in Practical Rotating Detonation Engines	Mirko Gamba		Thar Energy	Development of Modular, Low-Cost, High-Temperature Recuperators for the sCO2 Power Cycle - Prototype Performance Review	Marc Portnoff		Arizona State University	A Multiphysics Multiscale Simulation Platform for Damage, Environmental Degradation, and Life Prediction of Ceramic Matrix Composites (Cmcs) in Extreme Environments	Aditi Chattopadhyay
4.30 pm	University of Michigan	Fuel Injection Dynamics and Composition Effects on Rotating Detonation Engine Performance	Mirko Gamba		Echogen	Supercritical Carbon Dioxide Primary Power Large - Scale Pilot Plant	Tim Held		GE	High Temperature Additive Architectures for 65% Efficiency	Joe Weber
5.30 pm-7.15 pm	Lab tour: University of Central Florida										

Day 3 - Thursday, November 7, 2019											
7.30 am	Registration/Continental Breakfast - Vienna A Foyer										
	Track A - Combustion (Day 1) and Pressure Gain Combustion (Day 2 & 3) - Vienna B				Track B - Aero and Heat Transfer (Day 1) and Super Critical CO_2 (Day 2 & 3)-Normandy A				Track C - Materials (Day 1) and CMC & AM (Day 2 & 3)- Normandy B		
	Moderators: Mark Freeman and Donald Ferguson				Moderators: Robin Ames and Seth Lawson				Moderators: Rin Burke and Richard Dalton		
	Organization	Title	Presenter		Organization	Title	Presenter		Organization	Title	Presenter
8.30 am	Aerojet Rocketdyne	Rotating Detonation Combustion for Gas Turbines - Modeling and System Synthesis to Exceed 65% Efficiency Goal	Scott Claflin		GTI	Supercritical Carbon Dioxide Pilot Plant Facility	Brian Lariviere		University of Pittsburgh	Integrated Transpiration and Lattice Cooling Systems Developed by Additive Manufacturing with Oxide-Dispersion Strengthened Alloys	Minking Chu and Bruce Kang
9.00 am	UCF	Advanced Cost-Effective Coal-Fired Rotating Detonation Combustor for High Efficiency Power Generation	Kareem Ahmed		Altex	Corrosion and Erosion Resistant Surface Features for High Pressure Supercritical Carbon Dioxide Heat Exchangers	John Kelly		UT Austin	Integrated Turbine Component Cooling Designs Facilitated by Additive Manufacturing and Optimization	David Bogard
9.30 am	University of Michigan	Pressure Gain, Stability, and Operability of Methane/Syngas Based RDEs Under Steady and Transient Conditions	Mirko Gamba		SwRI	Development of Oxy-Fuel combustion Turbines with CO2 Dilution for sCO2 Based Power Cycles	Jeff Moore		Penn State University	Understanding Transient Combustion Phenomena in Low-NOX Gas Turbines and Development and Evaluation of a Novel Fuel Injector Design Method Using Hybrid Additive Manufacturing	Jacqueline O'Connor and Guha Manoghara n
10.00 am	AM break - Vienna A Foyer										
10.30 am	West Virginia University	Techno-Economic Optimization of Advanced Energy Plants with Integrated Thermal, Mechanical, and Electro-Chemical Storage	Debangsu Bhattacharyy a		Cascade Technologies	LES of Oxy-Fuel Combustion for sCO_2 Power Systems	Lee Shunn		University of Pittsburgh	An Effective Quality Assurance Method for Additively Manufactured Gas Turbine Metallic Components via Machine Learning from In-Situ Monitoring, Part-scale Modeling, and Ex-Situ Characterization Data	Xiayun Zhao

11.00 am					SwRI	High inlet Temperature Combustor for Direct fired Supercritical Oxy-Combustion	Jacob Delimont		Siemens Energy	Ensemble Manufacturing Techniques for Steam Turbine Components Across Length Scales	Anand Kulkarni
11.30 am					Georgia Tech	Advanced Model Development for LES of Oxy-Combustion and Supercritical Carbon Dioxide Power Cycles	Joseph C. Oefelein		GE	Improve Performance and Cost for Steam Turbine Maintenance, Repair, and Overhaul Using Additive Manufacturing	Changjie Sun
12.00 pm	Change room										
12.05 pm	Open Discussion, Workshop Summary, Closing Comments and Wrap-up - Richard Dennis, Advanced Turbines Technology Manager, NETL - Vienna B										
12.30 pm	Adjourn										