
Asian Congress on Gas Turbines 2020

— Tradition, Challenge and Future

Qingdao (Tsingtao), P. R. China

August 17-20, 2021

Organized by

Gas Turbine Society of Japan (GTSJ)
Korean Society for Fluid Machinery (KSFM)
Chinese Society of Engineering Thermophysics (CSET)
Indian Institute of Technology Bombay (IIT Bombay)

Local Organizers

Institute of Engineering Thermophysics, Chinese Academy of Sciences (IET, CAS)
Shanghai Advanced Research Institute, Chinese Academy of Sciences (SARI, CAS)
Qingdao Institute of Aeronautical Technology (QIAT)
Qingdao Science and Technology Bureau (QSTB)



公団社団法人 Gas Turbine Society of Japan
日本ガスタービン学会



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법인 Korean Fluid Machinery Association



中国工程热物理学会
Chinese Society of Engineering Thermophysics



Indian Institute of
Technology Bombay



中国科学院工程热物理研究所
Institute of Engineering Thermophysics,
Chinese Academy of Sciences



中国科学院
上海高等研究院
Shanghai Advanced Research Institute,
Chinese Academy of Sciences



青岛航空技术研究院
QINGDAO INSTITUTE OF AERONAUTICAL TECHNOLOGY



青岛市科学技术局

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Organization of Asian Congress on Gas Turbines 2020

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■ Organizing Committee

Osamu KAWAGUCHI (Keio University, Japan)
Toshinori WATANABE (University of Tokyo, Japan)
Makoto YAMAMOTO (Tokyo University of Science, Japan)
Won-Gu JOO (Yonsei University, Korea)
Daesung LEE (Korea Aerospace Research Institute, Korea)
Seung Jin SONG (Seoul National University, Korea)
JIN Hongguang (Institute of Engineering Thermophysics, CAS, China)
SUN Xiaofeng (Beijing University of Aeronautics and Astronautics, China)
HUANG Weiguang (Shanghai Advanced Research Institute, CAS, China)
Bhaskar Roy (Institute of Technology Bombay, Indian)
A M Pradeep (Institute of Technology Bombay, Indian)
B V S SS Prasad (Institute of Technology Madras, Indian)

■ Local Organizing Committee

ZHU Junqiang (Institute of Engineering Thermophysics, CAS) (Chairman)
HUANG Weiguang (Shanghai Advanced Research Institute, CAS)
TAO Zhi (Beihang University)
XI Guang (Xi'an Jiaotong University)
JIANG Peixue (Tsinghua University)

DU Zhaohui (Shanghai Jiaotong University)
WANG Songtao (Harbin Institute of Technology)
WANG Zhanxue (Northwestern Polytechnical University)
HU Jun (Nanjing University of Aeronautics and Astronautics)
LI Jianrong (China Institute of Air Engine)
SHU Guogang (China United Gas Turbine Technology Co. LTD.)
YANG Hong (Shanghai Electric Group Co. LTD.)
WANG Weimin (Dongfang Electric Turbine Co. LTD.)
ZHANG Qihong (Harbin Electric Turbine Co. LTD.)
GAO Chuang (Shanghai Advanced Research Institute, CAS)
DU Juan (Institute of Engineering Thermophysics, CAS)

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Message from the Organizing Committee

Distinguished Guests, Ladies and Gentlemen :

First of all, I would like to express my heartfelt congratulations on the opening of the Asian Gas Turbine Conference. I'd like to extend a warm welcome to all guests and representatives for coming. I would like to say "Thank you" to the Chinese Academy of Sciences and Qingdao Institute of Aeronautical Technology for their efforts for the smooth convening of the conference.

The Asian Gas Turbine International Conference is held every two years by China, Japan, South Korea and India. This year's conference is the second one hosted by China, and will provide an academic exchange platform for experts and young scholars in the field of gas turbine in Asia and even the world. At the same time, we hope to strengthen the communication and interaction among researchers, users and manufacturers in this field and promote multi-party communication and cooperation.



Institute of Engineering Thermophysics, Chinese Academy of Sciences, has a comprehensive layout in the field of gas turbine technology which has a prominent international influence with close cooperation and exchanges. Foundational research, key technology research and development of light-duty gas turbines have been layout. In the past five years, research on key technologies related to the overall design of light-duty gas turbines, compressors, combustion chambers, and control system design have been carried out with the support of the national and Chinese Academy of Sciences projects. On this basis, the institute has completed the engineering design of the whole machine, and assembly test run of the first gas turbine, and successfully realized full speed operation.

The institute will further provide comprehensive support for the research, development and industrialization of gas turbine technology, promote the development and growth of the institute in gas turbine technology, and make greater contributions to global green development and the realization of "Carbon Neutrality" and "Emission Peak".

Once again, thank you for attending the ACGT2020, we wish you will enjoy the conference!

A handwritten signature in black ink, appearing to read 'Zhu Junqiang'.

ZHU Junqiang
Chairman
Organizing Committee of the ACGT2020


About Asian Congress on Gas Turbines 2020

■ Agenda

ACGT2020 Conference Agenda		
Date	A.M.	P.M.
Tue, 17th Aug, 2021	Registration	
Wed, 18th Aug, 2021	Opening Ceremony; Keynote Speech; Invited Speech	Forum Session
Thur, 19th Aug, 2021	Invited Speech; Forum Session	Forum Session
Fri, 20th Aug, 2021	Visit; Leave	

■ Congress Venue

- Qingdao Institute of Aeronautical Technology,
Institute of Engineering Thermophysics, Chinese Academy of Sciences

- Video Conferencing: 

■ Objectives

Following the tradition set at the first six ACGT, the ACGT2020 will aim to provide an international forum for exchange of information related to gas turbine technology, especially among researchers in Asian Region. Through the enhancement of interaction and cooperation among Asian researchers and students, the ACGT2020 is expected to promote Pan-Asian cooperative effort in gas turbine research and development. The ACGT2020 will also act as a platform to promote interactions for gas turbine researchers, end users and manufacturers all over the world.

■ Topics of Technical Session

- Aerodynamics
- Heat Transfer and Thermodynamics
- Structure and Dynamics
- Manufacturing Materials & Metallurgy
- Applications
- Combustion, Fuel and Emissions
- Innovative Clean/Renewable Energy Technology
- Control, Diagnostics and Instrumentation
- Maintenance and User Experience
- Education

ACGT2020 SCHEDULE

Please note all times are in China Standard Time (CST)

Wednesday, 18th August, 8:30-9:00 | Day 1

Conference Host: Prof. HUANG Weiguang
Shanghai Advanced Research Institute, Chinese Academy of Sciences

ROOM 1

◆ **Welcome and Opening Address, 8:30-8:36 CST**

ACGT2020 Chairman: Prof. ZHU Junqiang
Institute of Engineering Thermophysics, Chinese Academy of Sciences

◆ **Opening Address from Japan, 8:36-8:42 CST**

Prof. Toshinori WATANABE
University of Tokyo

◆ **Opening Address from Korea, 8:42-8:48 CST**

Prof. Seung Jin SONG
Seoul National University

◆ **Opening Address from India, 8:48-8:54 CST**

Prof. A M Pradeep
Indian Institute of Technology Bombay

◆ **Welcome Address, 8:54-9:00 CST**

Director ZHAO Xichao
Qingdao Institute of Aeronautical Technology (Conference Venue)
and on behalf of Qingdao Local Authorities

Wednesday, 18th August, 9:00-12:05 | Day 1

Chair: Prof. Toshinori WATANABE
University of Tokyo

ROOM 1 9:00-9:50 CST Keynote Speech 1	Title: Key Technologies and Applications of Light-duty Aero-engine Speaker: Prof. ZHU Junqiang Institute of Engineering Thermophysics, CAS, China
ROOM 1 9:50-10:40 CST Keynote Speech 2	Title: To be determined Speaker: Prof. Kwangyol LEE Doosan Heavy Industries & Construction, Korea
10:40-11:00 CST	Coffee Break
ROOM 1 11:00-11:50 CST Keynote Speech 3	Title: Recent Progress in Gas Turbine Combustion Technologies Speaker: Prof. Satya CHAKRAVARTHY Aerospace Engineering Department, Institute of Technology Madras, Indian
ROOM 1 11:50-12:05 CST Introduction to Collaborating Journal	Title: Considerations for scientific journal development and Introduction to JTS Guest: Prof. ZHANG Na Executive Chief Editor of <i>Journal of Thermal Science</i> and <i>Journal of Engineering Thermophysics</i>
12:05-14:00 CST	Lunch

Wednesday, 18th August, 14:00-18:05 | Day 1

	ROOM 1	ROOM 2	ROOM 3	ROOM 4
Technical Session	<p>TRACK: Aerodynamic Design & Optimization</p> <p>Chair: YANG Jinguang (Dalian University of Technology) KAN Xiaoxu (Shanghai Maritime University)</p>	<p>TRACK: Combustor & Combustions</p> <p>Chair: HE Lei (Shanghai Electric Gas Turbine Co. Ltd.) LIU Cunxi (Institute of Engineering Thermophysics, CAS)</p>	<p>TRACK: Modeling & Controls</p> <p>Chair: DU Wenhai (Beijing Institute of Petrochemical Technology) WANG Zinan (Institute of Engineering Thermophysics, CAS)</p>	<p>TRACK: Structures & Dynamics</p> <p>Chair: GAO Chuang (Helan Turbines Co., Ltd.) HUANG Zhu (Xi'an Jiaotong University)</p>
14:00-14:50 CST	<p>Invited Speech 1 Title: Aerodynamic Design and Experimental Investigation of a Highly Loaded 10-stage Axial Compressor</p> <p>Speaker: Dr. ZHAN Xiaoshi Senior Engineer AECC Commercial Aircraft Engine Co., Ltd.</p>	<p>Invited Speech 2 Title: Development and Test Verification of DLN Burner for F-Class Heavy-Duty Gas Turbine</p> <p>Speaker: Dr. HE Lei Senior Engineer Shanghai Electric Gas Turbine Co. Ltd.</p>	<p>Invited Speech 3 Title: The Development of Heavy-duty Gas Turbine Control Systems with High Reliability and Flexibility</p> <p>Speaker: Dr. ZHANG Xiaoyi Professor Shanghai Advanced Research Institute</p>	<p>Invited Speech 4 Title: Introduction of Mechanical Integrity Assessment for Heavy-Duty Gas Turbine Casings and Rotor</p> <p>Speaker: Dr. CHEN Jian Professor Shanghai Advanced Research Institute</p>

<p>14:50-15:15 CST</p>	<p>ACGT2020-097 Aerodynamic Optimization of Blade Profiles of 3.5 Stages Transonic Compressor Considering Multiple Working Conditions</p> <p>CHEN Ting, XIE Hairun, HAN Ruixue, TAN Luyi Shanghai Electric Power Generation Group</p>	<p>ACGT2020-055 Study on Combustion Performance of Micro Gas Turbine Combustor with Different Fuel</p> <p>LIU Aigu, LI Haoran, YANG Yudong, FAN Ruiyang, WANG Xinci Key Laboratory of Advanced Measurement and Test Technology for Aircraft Propulsion Systems Shenyang Aerospace University</p>	<p>ACGT2020-059 Comparative Study on Different Neural Network Speed Controllers of Aero-Derivative Gas Turbine System</p> <p>GUO Senchuang, HE Ai, XIAO Bo, LIU Peijun, WANG Zinan Institute of Engineering Thermophysics, CAS</p>	<p>ACGT2020-026 The Partial Derivative Method for Supercritical CO₂ Foil Bearings Embracing Complete Variables Perturbation</p> <p>BI Chunxiao, HAN Dongjiang, YANG Jinfu Institute of Engineering Thermophysics, CAS</p>
<p>15:15-15:40 CST</p>	<p>ACGT2020-089 Influence of Hub Contouring on the Performance of a Transonic Axial Compressor Stage with Low Hub-Tip Ratio</p> <p>LI Xinlong, GENG Shaojuan, LIU Shuaipeng, ZHANG Hongwu Institute of Engineering Thermophysics, CAS</p>	<p>ACGT2020-054 Numerical Evaluation of Laminar Burning Velocity of Ammonia/Dimethyl Ether air Premixed Flames</p> <p>CAI Tao, ZHAO Dan Department of Mechanical Engineering, College of Engineering, University of Canterbury</p>	<p>ACGT2020-067 Thermodynamic Performance and NO_x Emission Assessment of a Gas Turbine with Staged Combustion</p> <p>YANG Huan, PAN Hejitian, GENG Sajie, LIU Yinhe Xi'an Jiaotong University</p>	<p>ACGT2020-063 Thermohydrodynamic Lubrication Analysis of Misaligned Gas Journal Microbearings</p> <p>WU Yao, YANG Lihua, XI Wenjun, CAO Jujiang School of Mechanical and Electrical Engineering, Shanxi University of Science and Technology</p>
<p>15:40-16:00 CST</p>	<p>Coffee Break</p>			

<p>16:00-16:25 CST</p>	<p>ACGT2020-035 Design Optimization and Loss Mechanism Analysis of Exit Rotor with Diffuser Passage in a Multi-stage Axial Compressor</p> <p><i>JIN Yun, GENG Shaojuan, LIU Shuaipeng, ZHANG Hongwu Institute of Engineering Thermophysics, CAS</i></p>	<p>ACGT2020-108 Effects of Fuel/Air Mixing on Combustion Emissions in A Real Size Gas Turbine DLN Burner</p> <p><i>SHI Ting, JIN Ming, LU Yudi, GE Bing, ZANG Shusheng Shanghai Jiaotong University</i></p>	<p>Invited Speech 5 Title: Progress of China's First F-class 50MW Heavy Duty Gas Turbine</p> <p>Speaker: <i>Dr. CHENG Guo-qiang Senior Engineer Dongfang Turbine Co., Ltd.</i></p>	<p>Invited Speech 6 Title: Quantifying the Structural Uncertainties of RANS Model for the Supersonic and Hypersonic Flows of Scramjets</p> <p>Speaker: <i>Dr. HUANG Zhu Associate Professor Xi'an Jiaotong University</i></p>
<p>16:25-16:50 CST</p>	<p>ACGT2020-093 Identification and Estimate of Losses in High-Speed Compressor Rotors</p> <p><i>MA Jingyuan, LIN Feng Jimei University</i></p>	<p>ACGT2020-033 Investigation on the Effect of the Structure Parameters of a Low Swirler on Pre-mixed Characteristics</p> <p><i>SHEN Siyuan, SONG Xiuyang, JI Chenzhen, ZHU Tong School of Mechanical Engineering, Tongji University</i></p>		
<p>16:50-17:15 CST</p>	<p>ACGT2020-092 Optimization of Compressor Airfoil Based on the Control of Suction Surface and Thickness Distribution</p> <p><i>LIU Shuaipeng, GENG Shaojuan, JIN Yun,</i></p>	<p>ACGT2020-107 Experimental Investigations on NO_x emission and Combustion Dynamics in an Axial Fuel staging combustor</p> <p><i>LI Yuze, JIA Yuliang, JIN Ming,</i></p>	<p>ACGT2020-077 Research on Off-design Performance of 9F Gas Turbine Based on gPROMs and BP Neural Network Model</p> <p><i>HAO Xuedi, SUN Lei, CHI Jinling</i></p>	<p>ACGT2020-015 A Sealing Structure for Radial Gas Turbine</p> <p><i>WU Fuxian, GAO Chuang Helan Turbines Co., Ltd.</i></p>

	LI Xinlong, ZHANG Hongwu <i>University of CAS</i>	LU Yudi, ZHU Xutong, GE Bing, ZANG Shusheng <i>Shanghai Jiaotong University</i>	Zhang Shijie <i>China University of Mining and Technology (Beijing)</i>	
17:15-17:40 CST	ACGT2020-100 Numerical Investigation of Sweep Rotor on Aerodynamic Performance of an Axial Transonic Fan Stage CAO Zhiyuan, GAO Xi, ZHANG Xiang <i>Northwestern Polytechnical University</i>	ACGT2020-103 Sensitivity Analysis of Critical Parameters of Pressure Fuel Nozzle on the Atomization Performance MO Da, LIU Yixiong, ZHANG Junfeng, ZHANG Chengkai, WANG Dongdong <i>AECC Shenyang Engine Institute</i>	ACGT2020-061 Numerical Investigation of Micro Gas Turbine Engine Based on Time-marching Throughflow Method YANG Chen, WU Hu, YANG Jinguang, DU Juan, ZHANG Hongwu <i>Institute of Engineering Thermophysics, CAS</i>	ACGT2020-076 Accurate Measurement of Turbine Blade Movements Based on Blade Tip Timing ZHANG Xulong, WANG Weimin <i>Beijing Key Laboratory of Health Monitoring and Self-recovery for High-end Mechanical Equipment, Beijing University of Chemical Technology</i>
17:40-18:05 CST	ACGT2020-116 Design Methods and Strategies for Forward and Inverse Problems of Turbine Blades Based on Machine Learning LUO Lei, YU Kaituo, LUO Qiao, WANG Song-tao <i>Harbin Institute of Technology</i>	ACGT2020-083 On Stability Boundary of Thermoacoustic Oscillation for Horizontal Rijke Tube: Critical Parameter Perspective103 MA Hongwei, MA Dan, LIN Hongjun <i>College of Information Science and Engineering, Northeastern University</i>	ACGT2020-106 Effects of Various Geometric Features on the Performance of a 7:1 Pressure Ratio Deeply Scalloped and Split Radial Turbine in a Gas Turbine Engine GAO Chuang, HUANG Weiguang <i>Shanghai Advanced Research Institute, CAS</i>	ACGT2020-105 Multiphysics Design of a High-Speed Permanent Magnet Machine for a Micro Gas Turbine ZHENG Mengzi, HUANG Weiguang, GAO Chuang <i>Helan Turbines Co., Ltd.</i>

Thursday, 19th August, 8:30-12:35 | Day 2

Chair: Prof. Seung Jin SONG
Seoul National University

ROOM 1
8:30-9:20 CST
Keynote
Speech 4

Title: Pathway to achieve Carbon Neutrality - What is the role for Gas Turbine ?

Speaker: Mr. Yasushi Fukuizumi
Mitsubishi Heavy Industries, Japan

	ROOM 1	ROOM 2	ROOM 3	ROOM 4
Technical Session	<p>TRACK: Cooling Technology</p> <p>Chair: SU Xinrong (Tsinghua University) DU Qiang (Institute of Engineering Thermophysics, CAS)</p>	<p>TRACK: Turbine Aerodynamics</p> <p>Chair: XU Shenren (Northwestern Polytechnical University) CUI Weiwei (Shandong University of Science and Technology)</p>	<p>TRACK: Combustor & Combustions</p> <p>Chair: GE Bing (Shanghai Jiaotong University) JI Chenzhen (Tongji University)</p>	<p>TRACK: Unsteady Flows</p> <p>Chair: PAN Tianyu (Beihang University) ZHANG Min (Institute of Engineering Thermophysics, CAS)</p>
9:20-9:45 CST	<p>ACGT2020-045 Experimental Investigation of Aerodynamic and Film Cooling Performance of Single Row Advanced Hole Geometries on High-Pressure Turbine Vane</p> <p>Vital Kumar Yadav Pillala, Ken-ichi Funazaki, Ryo Urushiyama, Yoji Okita,</p>	<p>Invited Speech 7 Title: Application of MDO on Air-Cooled Turbine Blade Design for Marine Gas Turbine</p> <p>Speaker: Dr. NIU Xiying Senior Engineer Harbin Marine Boiler and Turbine Research Institute</p>	<p>Invited Speech 8 Title: Experimental Research on Axial Staged Combustion Organization Method in Gas Turbine</p> <p>Speaker: Dr. GE Bing Associate Professor Shanghai Jiaotong University</p>	<p>ACGT2020-023 Experimental Investigation on the Instability Inception in a Transonic Single Rotor</p> <p>WU Wenqian, PAN Tianyu, LI Qiushi School of Energy and Power Engineering, Beihang University</p>

	<i>Shu Fujimoto, Tomonobu Aozasa Iwate University</i>			
9:45-10:10 CST	ACGT2020-037 Assessment of the Turbulence Characteristics of Shaped Film Cooling Hole with Scale Resolving Simulation WANG Qingsong, SU Xinrong, YUAN Xin Department of Energy and Power Engineering, Tsinghua University			ACGT2020-036 Tip Air Injection to Extend the Stall Margin in an Axial Compressor with Circumferential Distortion LIU Yang, LI Jichao, DU Juan, ZHANG Hongwu, NIE Chaoqun Institute of Engineering Thermophysics, CAS
10:10-10:30 CST	Coffee Break			
10:30-10:55 CST	ACGT2020-002 Effect of Heat Streak Pressure Ratio on Temperature Field of Turbine Vane with and without Film Cooling MIAO Hui, ZHU Jiangnan, MA Yiwon, LIU Zhigang, ZHANG Xiaodong Aero Engine Academy of China	ACGT2020-113 Experimental Investigation of Aerodynamic Performance Due to The Tip Clearance in a Gas Turbine Rotor Cascade Jinmoo Chung, Seungchan Baek, Wontae Hwang Seoul National University	ACGT2020-075 Optimization of Structure of Neural Network Substituting Flamelet Approach Using Genetic Algorithm Jun Nagao, Shunsuke Terauchi, Yoshiya Takahara, Ryoichi Kurose, Department of Mechanical Engineering and science, Kyoto University	ACGT2020-090 Design Optimization of Hybrid Casing Treatment in a Transonic Compressor Based on Axial Momentum Budget Analysis BA Dun, DU Juan, ZHANG Hongwu, NIE Chaoque Institute of Engineering Thermophysics, CAS

<p>10:55-11:20 CST</p>	<p>ACGT2020-057 Numerical Simulation of Film Cooling with Mist Injection</p> <p>ZHOU Zijian, LIN Hanyi, CHENG Yongpan <i>Beijing Key Laboratory of Multiphase Flow and Heat Transfer for Low Grade Energy, North China Electric Power University</i></p>	<p>ACGT2020-102 Research on Applications of a Modified DES Model in High-Pressure Turbine</p> <p>WANG Guoliang, GE Ning, QIU Ming <i>Aerospace Technology Institute, China Aerodynamics Research and Development Center</i></p>	<p>ACGT2020-006 Numerical Analysis of Thermo-acoustic Instabilities in a Swirled Annular Combustor Equipped with Modified Helmholtz Dampers</p> <p>YU Zhijian, YANG Yang <i>Institute of Engineering Thermophysics, CAS</i></p>	<p>ACGT2020-022 Numerical Investigation of The Momentum Transportation Between Rotor Tip and Axial-Slot Type Casing Treatment in a Transonic Compressor</p> <p>ZHU Mingmin, FENG Junda, QIANG Xiaoqing, TENG Jinfang <i>School of Aeronautics and Astronautics, Shanghai Jiao Tong University</i></p>
<p>11:20-11:45 CST</p>	<p>ACGT2020-111 Optimization for the Impingement Cooling with Pin-fin Roughened Wall using Deep Learning Approaches</p> <p>YANG Yue, MAO Junkui, CHEN Pingting <i>Nanjing University of Aeronautics and Astronautics</i></p>		<p>ACGT2020-071 The Validation of the Flexible Premix Burner in F-class Gas Turbine</p> <p>SHI Zeyu, YAN Wei, ZUO Yaqiang <i>Shanghai Electric Gas Turbine Co., Ltd. Gas Turbine Institute</i></p>	<p>ACGT2020-019 Hybrid Slot-groove Casing Treatment to Improve the Stall Margin under Circumferential Total Pressure Distortion on an Axial Flow Compressor</p> <p>LI Yihan, LI Jichao, DU Juan, ZHANG Hongwu <i>Institute of Engineering Thermophysics, CAS</i></p>

11:45-12:10 CST	ACGT2020-115 Experimental Study on Impact-Film Overall Cooling Characteristics of Turbine Shroud <i>LI Ziqiang,</i> <i>MAO Junkui,</i> <i>BI Shuai,</i> <i>WANG Longfei</i> <i>Nanjing University of Aeronautics and Astronautics</i>			ACGT2020-017 Quantification of S-duct Swirl Distortion Based on Vortex Identification Methods <i>LI Zhenyu,</i> <i>DONG Xu,</i> <i>SUN Xiaofeng</i> <i>Beihang University</i>
12:10-12:35 CST				ACGT2020-112 Endwall Treatment under Rain Ingestion in an Axial Flow Compressor <i>AN Zhaokai,</i> <i>DU Juan,</i> <i>LI Jichao,</i> <i>ZHANG Hongwu,</i> <i>NIE Chaoqun</i> <i>North China Electric Power University</i>
12:35-14:00 CST	Lunch			

Thursday, 19th August, 14:00-18:00 | Day 2

	ROOM 1	ROOM 2	ROOM 3	ROOM 4
Technical Session	TRACK: Compressor Aerodynamics Chair: Seung Jin SONG (Seoul National University)	TRACK: Heat Transfer Chair: YANG Xing (Xi'an Jiaotong University)	TRACK: Materials & Coatings Chair: WANG Jianhua (University of Science and Technology of China)	TRACK: Unsteady Flows Chair: LI Jichao (Institute of Engineering Thermophysics, CAS)
14:00-14:25 CST	Invite Speech 9 Title: Effects of Inlet Guide Vane Variability on Aerodynamic Performance of a One Stage Transonic Axial Compressor Speaker: Dr. GENG Shaojuan Associate Researcher Institute of Engineering Thermophysics, CAS	Invite Speech 10 Title: Recent Progress on Compact High Temperature Heat Exchanger Speaker: Dr. MA Ting Professor Xi'an Jiaotong University	ACGT2020-056 Numerical Investigation of Active Anti-Icing Technology using Electro-Thermal Effect of CFRP Yuxin Gao, Koji Fukudome, Makoto Yamamoto, Takuya Mizuno, Masaya Suzuki Tokyo University of Science	ACGT2020-079 Computationally Efficient Large Eddy Simulation of Periodic Unsteady Flow Using Harmonic Balance Method Yuma Iwamoto, Susumu Teramoto, Koji Okamoto Department of Aeronautics and Astronautics, University of Tokyo
14:25-14:50 CST			ACGT2020-082 Overall Thermal Performances of Double Wall Effusion Cooling Covered by Simulated Thermal Barrier Coatings	ACGT2020-065 Design of a Variable Curvature Blade Type Swirl Distortion Generator for Testing Gas Turbine Engines

			PU Jian, ZHANG Tiao, HUANG Xin, WANG Jianhua, WU Weilong <i>University of Science and Technology of China</i>	ZHANG Xinyu, TU Baofeng, FANG Rui, YANG Guang <i>College of Energy and Power Engineering, Nanjing University of Aeronautics and Astronautics</i>
14:50-15:15 CST	ACGT2020-080 Thermo Fluid Structure Coupled Simulation of Compressor Blade Shape during Rapid Start Up Toshinori Watanabe, Daiki Nakamura, Takehiro Himeno <i>University of Tokyo</i>	ACGT2020-096 Numerical Study of Film/Shock Interaction on Suction Surface of Transonic Turbine Cascade HUANG Kang, CHEN Diyun, MA Husheng <i>Aerospace Technology Institute, China Aerodynamics Research and Development Center</i>	ACGT2020-095 Effects of Heat Treatment Processes on Microstructure and Low Cycle Fatigue Life of Hastelloy-X Alloy Fabricated by Selective Laser Melting PAN Min, ZHANG Hongqi, TAN Luyi <i>Shanghai Electric Power Generation Group</i>	ACGT2020-068 Influence of the Incidence Angle on Compressor Cascade Flow Mechanism at Low Reynolds Number PENG Minyang, DU Wenhai <i>Beijing Institute of Petrochemical Technology</i>
15:15-15:40 CST	ACGT2020-101 Research on Influence Factors of Transient Trajectory and Impact Action after the Fan Blade Out in the Typical 2-shaft High bypass Ratio Turbofan Engine XU Xue, LI Hongxin, FENG Guoquan <i>AECC Shenyang Engine Research Institute</i>	ACGT2020-086 Development of Topology Optimization Technique for Air Cooled Oil Coolers: on the Expression of Two Separated Fluids Tsukasa Ishii, Toshinori Watanabe, Takehiro Himeno <i>School of Engineering, University of Tokyo</i>		ACGT2020-005 Behavior of Vaneless Diffuser Stall in a Centrifugal Compressor Yuki Agari, Yoshifumi Yamao, Nobumichi Fujisawa, Yutaka Ohta <i>Waseda University</i>

15:40-16:00 CST	Coffee Break			
Technical Session	ROOM 1	ROOM 2	ROOM 3	ROOM 4
	TRACK: Compressor Aerodynamics Chair: Toshinori WATANABE <i>(University of Tokyo)</i>	TRACK: Heat Transfer Chair: MAO Junkui <i>(Nanjing University of Aeronautics and Astronautics)</i>	TRACK: Compressor Aerodynamics Chair: Hisashi MATSUDA <i>(Hokkaido University of Science)</i>	TRACK: Unsteady Flows Chair: QIANG Xiaoqing <i>(Shanghai Jiao Tong University)</i>
16:00-16:25 CST	ACGT2020-047 Control of Snow Falling Flow Around NACA0015 Blade using practical-use Plasma electrode Hisashi MATSUDA Takahiro CHIBA, Masaki YAGAMI, Yusuke TAJIMA <i>Hokkaido University of Science</i>	ACGT2020-053 Optimum Design for Plate-fin Heat Exchanger of a Gas and Super-critical Carbon Dioxide Combined Cycle Using Thermal Oil as Intermediate Heat-transfer Fluid ZHAN Jun, CAO Yue, ZHOU Jianxin, SI Fengqi <i>School of Energy and Environment, Southeast University</i>	ACGT2020-049 Experimental Study on Multi-stage High Load Compressor at Low Reynolds Number LIANG Jun, XIA Lian, ZHANG Xiaoliang <i>AECC Sichuan Gas Turbine Establishment</i>	ACGT2020-041 Calibration of Modified Spalart-Allmaras Model Parameters for Linear Compressor Corner Flow Kotaro Matsui, Ethan Perez, Ryan T. Kelly, Naoki Tani Aleksandar Jemcov <i>IHI Corporation</i>
16:25-16:50 CST	ACGT2020-114 Parameter Optimization of Rib Layouts at the Squealer Tip in Turbine Stage BI Shuai, MAO Junkui, WANG Lei	ACGT2020-043 Numerical Simulation on Heat Transfer Characteristics of a Humid Air Premixed Model Combustor YANG Guang, SHAO Weiwei,	ACGT2020-104 Investigation on the Flow-induced Vibration Suppression of a Transonic Fan Blade LIU Yixiong, MO Da,	ACGT2020-040 DDES Analysis of Unsteady Characteristics of the Interaction between the Tip Leakage Flow and Wake LI Hui, SU Xinrong,

	<i>Nanjing University of Aeronautics and Astronautics</i>	LIU Ce, ZHANG Zhedian <i>University of CAS</i>	DU Qing, CHEN Yuzhi <i>AECC Shenyang Engine Institute</i>	YUAN Xin <i>Department of Energy and Power Engineering, Tsinghua University</i>
16:50-17:15 CST	ACGT2020-099 Design and Analysis of Coanda Jet Flap on the Aerodynamic Performance Improvement of Highly Loaded Compressor Airfoil ZHANG Jian, DU Juan, CHEN Ze, ZHANG Wenqiang, ZHANG Hongwu, NIE Chaoqun <i>North China Electric Power University</i>	ACGT2020-070 Effects of Variable Jet Nozzle Angles on Cross Flow Suppression and Heat Transfer Enhancement of Swirl Chamber XIAO Kun, HE Juan, FENG Zhenping <i>Shaanxi Engineering Laboratory of Turbomachinery and Power Equipment, Xi'an Jiaotong University</i>	ACGT2020-091 The Effects of Width Variation of Pressure-Side Winglet on Tip Flow Structure in a Transonic Rotor CUI Weiwei, WANG Xinglu, YAO Fei, LIU Fusong, WANG Cui-ping, YANG Laishun <i>Shandong University of Science and Technology</i>	ACGT2020-072 Stall Characteristics of a Mixed-flow Compressor with and without Axial Slot Casing Treatment QIU Jiahui, ZHANG Qianfeng, DU Juan, ZHANG Wenqiang, ZHANG Hongwu, NIE Chaoqun <i>Institute of Engineering Thermophysics, CAS</i>
17:15-17:40 CST	ACGT2020-048 Research on Calculation Method of Aerodynamic Parameters of Supersonic Probe Based on Gas Compressibility Factor KAN Xiaoxu, HUANG Gangfeng, WU Wanyang, ZHONG Jingjun <i>Merchant Marine College, Shanghai Maritime University</i>		ACGT2020-044 Experimental and Numerical Analysis of the Impeller Backside Cavity in a Centrifugal Compressor for CAES LIN Zhihua, ZUO Zhitao, LI Wei, SUN Jianting, ZHOU Xin, CHEN Haisheng, ZHOU Xuezhi <i>Institute of Engineering Thermophysics, CAS</i>	ACGT2020-060 Transition from Unsteady Flow Inception to Rotating Stall and Surge in a Transonic Compressor CAO Dongming, YUAN Caijia, WANG Dingxi, HUANG Xiuquan <i>Northwestern Polytechnical University</i>
17:40-17:50 CST	Closing Remarks			