Special Session Proposal

Special Session Basic Information:

专栏题目 **Session Title**	中文：**航空航天测试与诊断技术** 英文：**Aerospace Testing and Diagnostic Technologies**

专栏介绍和征稿主题
Introduction and topics

中文：航空航天领域对测试与诊断技术的要求极为严格，以确保飞机、航天器及相关系统的安全性、可靠性和性能。本专题会议聚焦于航空航天测试与诊断的前沿方法、工具与创新技术，涵盖结构健康监测、推进系统分析、航电系统验证以及基于人工智能的预测性维护等方向。我们诚邀研究人员与工程师分享其最新研究成果、案例研究及技术进展，共同推动该领域的发展。

针对以上内容，主要征稿主题包括：

1. **结构测试与健康监测**
2. **推进系统诊断技术**
3. **航电与嵌入式系统验证**
4. **气动与环境测试**
5. **人工智能与数据驱动诊断**

英文：The aerospace industry demands rigorous testing and advanced diagnostic techniques to ensure the safety, reliability, and performance of aircraft, spacecraft, and related systems. This Special Session focuses on cutting-edge methodologies, tools, and innovations in aerospace testing and diagnostics, covering structural health monitoring, propulsion system analysis, avionics verification, and AI-driven predictive maintenance. We invite researchers and engineers to share their latest findings, case studies, and technological advancements in this critical field.

Topics of Interest (including but not limited to):

1. **Structural Testing & Health Monitoring**
2. **Propulsion System Diagnostics**
3. **Avionics & Embedded System Verification**
4. **Aerodynamic & Environmental Testing**
5. **AI & Data-Driven Diagnostics**

Special Session Chair(s):

姓名 **Name**	金秉宁 Bingning JIN
称谓 **Prefix**	副研究员 Associate associate researcher
部门 **Department**	航天学院，固体推进全国重点实验室 School of Astronautics, National Key Laboratory of Solid Propulsion
单位 **Organization**	西北工业大学 Northwestern Polytechnical University
城市/地区 **City/Region**	西安/陕西 Xi'an/Shannxi

Organizer's Brief Biography

中文：金秉宁，西北工业大学航空宇航推进理论与工程专业工学博士，航天学院空天动力技术研究所副研究员，硕士生导师。主要从事火箭发动机不稳定燃烧预示及控制技术、先进燃烧测量技术和声学抑制技术等方面的教学和研究工作。主持参与了自然科学基金等多个相关领域的课题研究。发表 SCI/EI 论文 30 余篇，授权发明专利 10 余项，省部级科研奖励 2 项。出版《固体推进剂不稳定燃烧理论》、《固体火箭发动机燃烧不稳定》、《燃烧诊断学》、《推进系统智能测试技术》等著作。

英文：Jin Bingning, Ph.D. in Aerospace Propulsion Theory and Engineering from Northwestern Polytechnical University, Associate Researcher at the Institute of Aerodynamics and Propulsion Technology, School of Aerospace, and Master's Supervisor. His primary research and teaching focus on combustion instability prediction and control technologies, advanced combustion diagnostics, and acoustic suppression techniques in rocket engines. He has led and participated in various research projects funded by the Natural Science Foundation and other related fields. He has published over 30 SCI/EI papers, holds more than 10 authorized invention patents, and has received 2 provincial and ministerial-level scientific research awards. He has also published books such as "Theory of Unstable Combustion of Solid Propellants," "Combustion Instability of Solid Rocket Engines," "Combustion Diagnostics," and "Intelligent Testing Technology for Propulsion Systems.".

姓名 **Name**	吕翔 Xiang LV
称谓 **Prefix**	教授 Professor
部门 **Department**	航天学院，固体推进全国重点实验室 School of Astronautics, National Key Laboratory of Solid Propulsion
单位 **Organization**	西北工业大学 Northwestern Polytechnical University
城市/地区 **City/Region**	西安/陕西 Xi'an/Shannxi

Organizer's Brief Biography

中文：吕翔，博士，教授，博士生导师。西北工业大学航天学院飞行器动力工程专业建设负责人，固体推进全国重点实验室（分部）副主任。主要从事火箭发动机燃烧流动、测试诊断技术相关教学和科研工作，在《Combustion and Flame》、《Chinese Journal of Aeronautics》、《Fuel》、《宇航学报》等发表 SCI/EI 论文 40 余篇，获国家重大航天工程任务先进个人荣誉 1 项、省部级科研奖励 3 项、西北工业大学本科最满意教师称号（2023-2024 学年）。出版《火箭发动机测试技术》、《燃烧诊断学》等教材专著 7 部，其中国家级规划专著 1 部、省部级规划教材 2 部、校级规划教材 1 部、校级优秀教材 1 部。

英文：LV Xiang, Ph.D., Professor, Doctoral Supervisor. He serves as the Head of the Aircraft Power Engineering Program at the School of Astronautics, Northwestern Polytechnical University (NPU), and Deputy Director of the National Key Laboratory of Solid Propulsion (Branch). Specializing in rocket engine combustion flow dynamics and testing/diagnostic technologies, he has published over 40 SCI/EI-indexed papers in high-level academic journals and conferences, including *Combustion and Flame*, *Chinese Journal of Aeronautics*, *Fuel*, *Journal of Astronautics*. His honors include the National Outstanding Individual Award for Major Aerospace Engineering Missions, three

provincial/ministerial-level research awards, and NPU's "Most Satisfactory Undergraduate Teacher" title (2023-2024 academic year). He has authored seven textbooks and monographs including Rocket Engine Testing Technology and Combustion Diagnostics, comprising one nationally planned monograph, two provincial/ministerial-level planned textbooks, one university-level planned textbook, and one university-level outstanding textbook.

姓名 Name	Yu GUAN
称谓 Prefix	Assistant Professor
部门 Department	Department of Aeronautical and Aviation Engineering
单位 Organization	Hong Kong Polytechnic University
城市/地区 City/Region	Hong Kong/China

Organizer's Brief Biography

中文：关昱，香港理工大学航空及民航工程学系助理教授/博士生导师，主要研究方向为燃烧不稳定及其控制方法、零碳燃料的燃烧动力学、非线性动力学及机器学习应用等。他的研究受国家自然科学基金项目和香港创新科技署创新及科技基金项目资助，在燃烧、流动和非线性动力学领域国际期刊上发表学术论文近 50 篇，谷歌学术引用过千次。

英文：Dr. Yu Guan is an Assistant Professor in the Department of Aeronautical and Aviation Engineering at Hong Kong Polytechnic University. His research interests include combustion instability and its control strategies, combustion dynamics of zero-carbon fuels, nonlinear dynamics, and machine learning. His research is funded by the National Natural Science Foundation of China and the Innovation and Technology Comission of Hong Kong. He has published nearly 50 journal papers in leading international SCI journals focusing on combustion, fluid mechanics, and nonlinear dynamics. His work has received over 1000 citations based on Google Scholar metrics.