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ONLINE COURSE

Aerospace Manufacturing: Advanced Techniques

February 23, 2021
Online | Pacific Time



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for the online symposium

Overview



The aerospace industry has suffered in 2020 due to the impacts of the covid-19 pandemic just like most industries. Simultaneously, the United States is at risk of being displaced by China as the world's space superpower. More than ever, aerospace manufacturers and suppliers in America are looking for ways to streamline operations, reduce costs and improve efficiencies, but most importantly, stay competitive. Aerospace companies that embrace advancements in manufacturing will have a greater chance to create a competitive advantage, survive the pandemic recession, and thrive in the long run.

LRA Institute's online symposium, Aerospace Manufacturing: Advanced Techniques brings together expert consultants, innovative solutions providers, and senior technical engineers from the federal government and a leading national institute. Get the latest information on industry standards, composite materials, best manufacturing practices, and advanced techniques to push America's aerospace supply chain forward.

Learning Objectives

This event will provide attendees an opportunity to:

- Get a status update on the latest FAA regulations, policies, and guidelines
- Hear about the latest standardization initiatives & activities
- Recognize best practices for the certification process
- Review the latest applications of composite materials
- Evaluate software solutions for generative design
- Gain a better understanding of flexible manufacturing, automation, robotics, adaptive factory floors, and the Digital Thread
- Develop strategies for rapid prototyping, reducing costs & increasing efficiencies
- Gauge market opportunities and the most profitable applications in additive manufacturing for aerospace parts and components

Who Should Attend

- Government authorities & regulators
- Aerospace engineers
- Aerospace OEMs
- Aerospace parts & components manufacturers
- Aerospace equipment suppliers
- Aerospace raw materials suppliers
- Standards institutions
- Research institutions
- Aerospace manufacturing associations

Agenda

FEBRUARY 23, 2021 - PACIFIC TIME

8:00 am – 4:00 pm

Course Timing

8:00 – 8:45 am

Keynote Address: Latest Standardization Initiatives & Activities

- Latest FAA regulations, policy, and guidelines
- Best practices for certification
- FAA AM research

Cindy Ashforth, Senior Technical Specialist, Federal Aviation Administration (FAA)

8:45 – 9:30 am

Advanced Composite Manufacturing with Automation and Artificial Intelligence

- Overview of Advanced Technologies Lab for Aerospace Systems (ATLAS)
- Material qualification (NCAMP) to manufacturing demonstrations
- Industry engagement and workforce training

Waruna Seneviratne, PhD, Director-ATLAS, Senior Research Scientist-Composites & Structures, National Institute for Aviation Research (NIAR)

9:30 – 10:15 am

Flexible Manufacturing & Creating a Competitive Advantage

- Reducing production timelines
- Production tooling
- Pre-testing operational efficiencies
- Robotic applications
- Rapid prototyping
- Additive manufacturing
- Automation and the Digital Thread
- Tools for creating an adaptive and efficient factory floor

David Riemer, Chief Executive Officer, Intermountain Aerospace Consulting

10:15 – 11:00 am

Latest Software Solutions for Generative Design

- Generative design, the pre-cursor to additive manufacturing
- Simulation, optimization, and test solutions
- Light-weighting aerospace parts and reducing part-count
- Benefits of transitioning from “Design, Analyze, Build” to “Analyze, Design, Build”

Dr. Jan Leuridan, Senior Vice President, Simulation & Test Solutions, Siemens Digital Industries Software

11:00 am – 12:00 pm

Market Opportunities and Latest Applications in Additive Manufacturing

- Most profitable applications in additive manufacturing for aerospace parts and components
- Path to certification
- Standardized platforms for flight ready parts
- Choosing the right machine and materials
- Best practices and lessons learned in printing flight ready parts
- How to guarantee the first part is the same as the last part

Jim Monroe, Director of Additive Manufacturing, Aerospace & High-Performance Applications, American Additive Manufacturing

12:00 – 1:00 pm

Lunch Break

1:00 – 2:00 pm

Qualifying Powder Bed Fusion (PBF) Parts for Aerospace Applications

- Best practices and lessons learned from a member of the NASA Technical Discipline Team

Shane Collins, Vice President & General Manager North America Operations, Additive Industries

Agenda

FEBRUARY 23, 2021 - PACIFIC TIME (CONTINUED)

2:00 – 3:00 pm

In-Process Monitoring

- Understanding key process variables to control additive manufacturing
- Using the Digital Thread for inspection

Wentao Fu, Senior Manager, Additive Manufacturing, Boeing

3:00 – 4:00 pm

Analysis to Certification

- Stress analysis & damage tolerance analysis for aerospace
- How to characterize emergent materials
- Developing path to certification

Charles Park, Associate Technical Fellow, Boeing

Speakers



Cindy Ashforth

Senior Technical Specialist, Federal Aviation Administration (FAA)

Ms. Ashforth has over 25 years' experience testing and certifying composite structures, as both a certification manager and composite materials specialist. Her background includes student research at the air force research lab, testing and certification at propeller and general aviation manufacturers, certification and quality assurance at an aviation equipment manufacturer, and FAA program manager for international validation of transport aircraft.

As one of the FAA's subject matter experts for advanced materials, she provides technical advice on rule making activities, writes guidance documents, and develops and delivers educational materials. She assists in certification projects to help apply consistent risk-based standards across all product types and contributes to continued operational safety activities related to advanced material applications. She writes requirements for FAA research on advanced materials and works closely with university and industry partners to promote standardization through industry organizations.

Ms. Ashforth has a BS in Engineering Mechanics from the University of Wisconsin and a MS in Materials Science from Wright State University.



Shane Collins

Global Sales Leader, Additive Industries

Shane is currently the V.P. of Additive Industries of North America, Inc and the General Manager of the Process and Application Development Center in Camarillo, CA. He has P&L responsibility for North America and is the global sales leader for Additive Industries. Shane is a 20-year veteran of the additive manufacturing industry holding various positions in operations, product management, and business development for both 3D printing machine manufacturers and tier 1 part suppliers. He sponsored several metal powder bed fusion standards and holds the position of Chair of the ASTM F42.07 on additive manufacturing Applications and was formerly, Chair of F42.05 on Materials and Process for 10 years. Shane was presented the ASTM Robert F. Painter Memorial Award in 2017, the ASTM Award of Merit in 2018 and has the honorary title of Fellow of ASTM. He is co-author on publications in the powder bed fusion of 17-4 stainless steel, nickel alloy 625 and nickel alloy 718. Shane is currently working for the NASA Technical Discipline Team as an additive manufacturing SME.

Speakers

Wentao Fu

Senior Manager, Additive Manufacturing, Boeing



Dr. Jan Leuridan

Senior Vice President, Simulation and Test Solutions, Siemens Digital Industries Software

Dr. Jan Leuridan is Senior Vice President in charge of Simulation and Test Solutions for Siemens PLM Software, a business unit of the Siemens Digital Factory Division. He also serves as CEO for Siemens Industry Software NV. Siemens PLM Software is a leading global provider of product lifecycle management (PLM), manufacturing operations management (MOM) software and Cloud/IoT platforms. Headquartered in Plano, Texas, Siemens PLM Software works collaboratively with its customers to provide industry software solutions that help companies everywhere achieve a sustainable competitive advantage by making real the innovations that matter.

In 1984, Dr. Leuridan joined LMS International as Research and Development Manager and was subsequently appointed to the position of Chief Technical Officer for the company, and as member of the company's Board of Directors. Following the acquisition of LMS by Siemens in 2013, Dr. Leuridan assumed his current role as CEO for Siemens Industry Software NV, and SVP of the Simulation & Test Solutions (STS) Business Segment within Siemens PLM Software, where the Simcenter portfolio is developed. Simcenter comprises the applications from the LMS and CD-adapco acquisition along with the NX based simulation portfolio (NX CAE, NX Nastran), as well as the applications of recently acquired TASS International, Mentor Graphics as well as applications for materials engineering from Multimechanics and Culgi.

Dr. Leuridan received an engineering degree from the Department of Mechanical Engineering at the University of Leuven in 1980. He later received a M.Sc. (1981) and Ph.D. (1984) from the Department of Mechanical & Industrial Engineering at the University of Cincinnati. He is currently based in Leuven, Belgium.

Dr. Leuridan is a fellow from the Belgian/American Educational Foundation and recipient of the 2020 Werner von Siemens Top Innovator award.

Jim Monroe

Director of Additive Manufacturing, Aerospace & High-Performance Applications, American Additive Manufacturing



Jim Monroe is a Philadelphia native and is the Director at American Additive Manufacturing. Jim is a seasoned Marine Corps Veteran, with extensive experience as a Combat Engineer. He holds a MBA and undergraduate degree from Widener University. He got his start selling Commercial Additive Manufacturing equipment but quickly expanded his territory and responsibilities. He has worked with teams around the world, aiding in the implementation of Aerospace Additive Solutions. Jim's focus is on the production of aerospace parts and tooling with thousands of cabin interior components printed & certified in the past 12 months. Jim also helped form a workforce development program with the Philadelphia Federation of Teachers and is actively working to assist some of the most underprivileged schools in the city. In 2018 he joined the American Additive Manufacturing Organization and has leveraged his position to inspire others. He currently sits on the Executive Committee of America Makes and is dedicated to the proliferation of this technology.

Speakers

Charles Park

Associate Technical Fellow, Boeing



David Riemer

Chief Executive Officer, Intermountain Aerospace Consulting

Mr. Riemer is the owner of Intermountain Aerospace Consulting which assists companies develop and execute effective digital transformations through the use of the digital twin and digital thread. Prior to that Mr. Riemer was the VP, Aerospace and Defense at Siemens Industrial Software where he was responsible for product development strategy, marketing and revenue generation for global aerospace and defense. Before joining Siemens, Mr. Riemer had a 35-year career in aerospace and defense holding vice president of engineering positions at both ATK Launch Systems and Raytheon Aircraft. In addition, at Raytheon Aircraft Mr. Riemer was responsible for the winning the Joint Primary Aircraft Training (T-6A) and the execution of that program for 11 years from product concept to complete logistics support. Mr. Riemer was also the VP and General Manager for the government business at Raytheon Aircraft. He has an extensive background in program management, business development, manufacturing, logistics support and engineering in Aerospace and Defense.

Waruna Seneviratne, PhD

Director – ATLAS, Sr. Research Scientist – Composites & Structures, National Institute for Aviation Research (NIAR)



Dr. Seneviratne is currently the Director of Advanced Technologies Lab for Aerospace Systems (ATLAS) and a Sr. Research Scientist (Composites & Structures) at Wichita State University's National Institute for Aviation Research (NIAR). The mission of ATLAS is to develop a multi-disciplinary manufacturing environment and an engineering education program to prepare engineers and educators for the Factory of the Future and to aid the current workforce in seamlessly adapting to advancements in the workplace. Currently Dr. Seneviratne is responsible for a research portfolio that includes projects from the Federal Aviation Administration, Department of Defense, Department of Homeland Security, National Aeronautics and Space Administration, and aircraft industry in the areas of advanced manufacturing and inspections, durability and damage tolerance, certification, and aging of composite aircraft structures. He is an active member of Composite Materials Handbook (CMH-17) and his previous research findings have contributed to damage tolerance, disbond delamination, data review, and statistics working groups, and supported world-wide composite damage tolerance and maintenance workshops sponsored by FAA, NAVIAR, and European Aviation Safety Agency (EASA).

Prior to joining Wichita State, Dr. Seneviratne worked as a Stress Analyst for Airbus, where he collaborated with the European Aeronautic Defense & Space (EADS) and AIRBUS partners on advanced material research and AIRBUS composite stress analysis methods training. He was responsible for performing detailed stress analysis (FEM and in-house AIRBUS analysis methods) on AIRBUS A380 passenger aircraft wings per FAA and EASA regulations and preparation of certification documents.

Instruction Methods

PowerPoint presentations will be used in the program.

IACET Credits



EUCI has been accredited as an Authorized Provider by the International Association for Continuing Education and Training (IACET). In obtaining this accreditation, EUCI has demonstrated that it complies with the ANSI/IACET Standard which is recognized internationally as a standard of good practice. As a result of their Authorized Provider status, EUCI is authorized to offer IACET CEUs for its programs that qualify under the ANSI/IACET Standard.

EUCI is authorized by IACET to offer 0.7 CEUs for the symposium.

Online Course Delivery & Participation Details

We will be using Microsoft Teams to facilitate your participation in the upcoming event. You do not need to have an existing Teams account in order to participate in the broadcast – the online course will play in your browser and you will have the option of using a microphone to speak with the room and ask questions, or type any questions in via the chat window and our on-site representative will relay your question to the instructor.

- You will receive a meeting invitation which will include a link to join the meeting.
- Separate meeting invitations will be sent for the morning and afternoon sessions of the online course.
 - You will need to join the appropriate meeting at the appropriate time.
- If you are using a microphone, please ensure that it is muted until such time as you need to ask a question.
- The remote meeting connection will be open approximately 30 minutes before the start of the online course. We encourage you to connect as early as possible in case you experience any unforeseen problems.

Requirements for Successful Completion

Participants must log in each day and be in attendance for the entirety of the course to be eligible for continuing education credit.

Please Select

**AEROSPACE MANUFACTURING: ADVANCED TECHNIQUES
ONLINE SYMPOSIUM:**
FEBRUARY 23, 2021: US \$895 (Single Connection)

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OR Enclosed is a check for \$ _____ to cover _____ registrations.

Substitutions & Cancellations

Your registration may be transferred to a member of your organization up to 24 hours in advance of the event. Cancellations must be received on or before January 22, 2021 in order to be refunded and will be subject to a US \$195.00 processing fee per registrant. No refunds will be made after this date. Cancellations received after this date will create a credit of the tuition (less processing fee) good toward any other LRA Institute event. This credit will be good for six months from the cancellation date. In the event of non-attendance, all registration fees will be forfeited. In case of course cancellation, LRA's liability is limited to refund of the event registration fee only. For more information regarding administrative policies, such as complaints and refunds, please contact our offices at 1 888-305-0392 . LRA reserves the right to alter this program without prior notice.

