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FOR IMMEDIATE RELEASE – March 31, 2021

The CMSE 2021 Virtual Conference to Highlight the Latest Advancements in Reliability, Testing, & Packaging Technology for High-Reliability Military & Space Electronic Components

In addition to three keynotes, four in-depth tutorial sessions, and 25 technical presentations delivered by experts from industry, government, and academia, the 24th annual Components for Military & Space Electronics (CMSE) Conference will also feature two panel discussions, an European Union COTS-focused session, special interactive student sessions, and an invited address from Department of Defense OUSD (R&E) DMSMS and Parts Program Manager Robin Brown.

BETHLEHEM, PA (March 31, 2021) – The 24th annual Components for Military & Space Electronics Conference ([CMSE 2021](#)), the industry’s premier forum designed to present the best practices for component and project engineers, quality assurance and supply chain personnel engaged in military and space electronic systems, will be held virtually April 19–23, and feature a comprehensive program consisting of four in-depth tutorial sessions and more than 35 technical presentations delivered by experts from industry, government, and academia, as well as a series of three keynotes, two panel discussions, an European Union COTS-focused session, special interactive student sessions, and an invited address from Robin Brown, Obsolescence/Diminishing Manufacturing Sources & Material Shortages (DMSMS) and Parts Management Program Manager for the Department of Defense.

“With the increasing emphasis on the use of commercial components in military and space systems, both government and industry professionals have recognized the need for a specialized technical conference dedicated to best practices for the use of COTS components in military and aerospace systems,” said CMSE 2021 Program Chairman Thomas J. Green. “Now in its 24th year, CMSE has expanded its program with high-quality technical talks, keynote addresses, and panel discussions that provide the maximum opportunities for attendee participation and interaction, even in the virtual format. We’ve also recognized the need to foster the development of the next generation of component engineers by expanding our student programs.”

The CMSE 2021 virtual conference provides an opportunity for design engineers, government project managers, and Department of Defense procurement professionals to exchange technical information on a comprehensive range of topics relating to military and COTS components, including:

- Passive components for military and high-reliability space systems
- Use of alternate grade components for military and space applications
- Gallium nitride (GaN) technology for power and high frequency RF devices
- Component reliability
- Supply chain and security issues

Invited Speaker

Robin Brown, Obsolescence/Diminishing Manufacturing Sources & Material Shortages (DMSMS) and Parts Management Program Manager for the Department of Defense, will deliver an invited address, [“Strategic Parts and Material Management – a Proactive Lifecycle Approach to Handle Obsolescence,”](#) presented on Wednesday, April 21 at 1:00 p.m. Brown’s presentation will discuss a systems analysis approach, addressing how initiating and conducting effective parts management and obsolescence management early and throughout a system’s lifecycles is the key for executing the most cost-effective strategy, reducing risk, and eliminating impact.

Three Keynotes

Three industry-leading experts will deliver keynote addresses as part of the conference program.

- **Brian Hardt**, GM of the Electronics & Sensors Division of The Aerospace Corporation, will present, [“Capitalizing on the Benefits of Alternate Grade Electronics with Informed Risk,”](#) on Tuesday, April 20, at 10:30 a.m., providing a discussion of applications where alternative-grade electronics could offer distinct advantages by leveraging advanced capabilities, ready access, and low purchase cost.
- **Dr. Jonathan Pellish**, Electrical, Electronic, Electromechanical, and Electro-optical (EEEE) Parts Manager at NASA’s Goddard Space Flight Center, will present [“Technology Assurance for Space Systems in an Age of Rapid Diversification,”](#) on Wednesday, April 21, at 10:30 a.m. The presentation will focus on the cost, performance, and schedule expectations of today’s missions, which often require the use of COTS components or technologies, including automotive electronics and advanced packaging solutions.
- **Dr. Navid Asadi**, assistant professor at the University of Florida, will present [“Physical Assurance and Inspection of Electronics,”](#) on Thursday, April 22, at 11:30 a.m., focusing on the state-of-the-art physical inspection/assurance methods, the existing countermeasures, related challenges to develop new countermeasures, and a research roadmap for this emerging field.

Featured Tutorial Sessions

This year’s CMSE conference features four half-day tutorial sessions, including: [“Thermal Materials and Testing: Key Solutions for Mil/Aerospace Electronics Systems,”](#) presented by Dave Saums, DS&A LLC, on Monday, April 19, from 10:30 a.m. to 2 p.m., and an [“Overview of Microelectronic Component Specs for Military and Space Electronics,”](#) presented by Lawrence Harzstark, Aerospace; Peter Majewicz, NASA Goddard; and Ron Demcko, AVX on Monday April 19, from 2 p.m. to 5:30 p.m.

On Friday, April 23, the last two tutorial sessions will include: [“Volatiles Control in Hermetic Electronic Components,”](#) presented by Thomas Green, TJ Green Associates, LLC, and Robert Lowry, Electronics Materials Consultant, from 10:30 a.m. to 2 p.m.; and the [“Capacitor Reliability Seminar,”](#) presented by Dr. Yuri Freeman, KEMET, and Ron Demcko, AVX, from 2 p.m. to 5:30 p.m.

Technical Sessions

The virtual CMSE conference will include [six technical sessions](#), comprising a total of 25 presentations from experts in industry, government, and academia. The technical sessions will focus on topics, including passive components for military and high-reliability space systems, GaN for RF and power, reliability, and supply chain and security.

Two Panel Discussions

The conference’s first panel discussion, [“Status, Risks and How to Use Alternate Grade Products for Military and Space Application,”](#) will be presented on Tuesday, April 20, at 1:30 p.m., and will

examine the various alternate grade parts that are potentially available (i.e. automotive grade, COTS, and PEMs) and the risks/rewards associated with them versus established military- and space-grade parts, such as Class S microcircuits or MIL-PRF-55365 capacitors. Discussion points will include: different types of alternate grade parts; strategies for use of automotive grade and plastic encapsulated microcircuits (PEMs) for military and space applications; and the pros and cons of alternate grade parts. The discussion will be moderated by Sultan Lilani, Integra Technologies, and the panelists include Allyson Yarbrough, Aerospace Corporation; Yuri Freeman, KEMET; Mark Porter, NASA Jet Propulsion Lab; and David Locker, U.S. Army.

The second panel discussion, “[Gallium Nitride \(GaN\) Technology for Power and High Frequency Components](#),” will be held on Wednesday, April 21, at 2 p.m. This interactive discussion with industry experts will explore how military and space applications can take the advantages GaN technologies, which is used in power semiconductor devices as well as RF and high frequency microwave components, and is emerging as a technology for military and space applications, to develop more efficient and higher performance electronic systems. The discussion will be moderated by Gary Lerude, technical editor of Microwave Journal, and the panelists include Paul Hebert, International Rectifier HiRel Products, Inc.; John Scarpulla, The Aerospace Corporation; and Keith Benson, Analog Devices, Inc.

European Union COTS-Focused Session

A technical session focused on COTS standards in the European Union will be held on Thursday, April 22, and will be chaired by Dr. Tomas Zednicek, EPCI European Passive Components Institute. Presenters include:

- “[Evolution of EEE Standard with regards to COTS and New Space](#),” Dr. Lacombe Denis, ESA/ESTEC
- “[Updated Approach for Passive-COTS \(ECSS-Q-ST-60-13\). Practical Case](#).” Manuel Morales, Alter Technology TÜV NORD S.A.U.
- “[Automotive Capacitors Procurement for SME Space Hardware Manufacturer Case Study](#),” Tomas Zednicek, Ph.D., EPCI European Passive Components Institute
- “[Method for Qualitative Evaluation of COTS Board Reliability](#),” Vincent Martinez, Serma Technologies

Student Program (To Include \$4,000 For Awards)

Three days of the CMSE 2021 program will focus on students and young professionals planning a career in the military and aerospace industry as component process or quality engineers, designers or researchers. Conference registration is **FREE** for graduate students, undergraduates, and young professionals (three years since graduation) already working in the field.

Special events for students include:

- Trivia competition featuring an array of obvious, fascinating, or little-known facts about space and electronics
- Graduate students will have the opportunity to present their research to a panel of friendly judges
- Poster session for presentation of student papers, with an opportunity for \$4,000 in total awards
- All students will be able to find out more about a career in the military/aerospace industry during an [interactive panel](#) held on Thursday, April 22, from 4 p.m.– 6 p.m., with an opportunity to ask questions of seasoned professionals currently working in the industry regarding career paths and job opportunities, and begin to network and build relationships within the industry.

Application Note Sessions Showcase Vendor Presentations

Four “Application Note” sessions during the CMSE 2021 program will provide an opportunity for attendees to find out about the latest product and technology news from key vendors in the aerospace component industry. Presenting companies during these sessions include: [Vishay Intertechnology](#), [Palomar Technologies](#), [Topline Corporation](#), [Gel-Pak](#), [Hesse Mechatronics](#), [AVX Corporation](#), [ES Components](#), [MicroCircuit Laboratories](#), and [Q-Tech Corporation](#).

Program Overview and Registration

The CMSE 2021 Advance Technical Program and schedule of events are available online at <https://www.tjgreenllc.com/cmse/2021-advance-program/>. Registration for the CMSE 2021 is also now open online at <https://store.tjgreenllc.com/product-category/cmse2021/>.

For more information about CMSE, please visit <https://www.tjgreenllc.com/cmse/>, email info@tjgreenllc.com, and follow them on [Twitter](#) and [LinkedIn](#).

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About CMSE/TJ Green Associates

The [Components for Military & Space Electronics](#) is the industry’s premier technical conference for presenting best practices for component engineers, project managers, quality assurance, and supply chain professionals focused on the design, reliability, and application of electronic components for military, avionics, aerospace, and commercial space systems.

[TJ Green Associates LLC](#) is a veteran-owned small business dedicated to providing leadership in teaching and consulting services for the assembly and packaging of microelectronic components used in high-reliability military, space, and medical device applications. Founder and principal Thomas J. Green, a 28-year USAF veteran, has more than 38 years combined experience in industry, academia, and Department of Defense positions developing teaching and consulting programs for microelectronics assembly-related materials and processes.