ECTC

The 2022 IEEE 72nd Electronic Components and Technology Conference

CALL FOR PAPERS

SHERATON SAN DIEGO HOTEL & MARINA, SAN DIEGO, CALIFORNIA, USA • MAY 31 - JUNE 3, 2022

Introduction

On behalf of the IEEE Electronic Components and Technology Conference (ECTC) Program Committee, it is my pleasure to invite you to submit an abstract for the 72nd ECTC, to be held May 31 - June 3, 2022, at The Sheraton San Diego Hotel and Marina, San Diego, California. This premier international conference, sponsored by the IEEE Electronics Packaging Society (EPS), covers a wide spectrum of electronic packaging technology topics, including components, materials, assembly, interconnect design, device and system packaging, heterogeneous integration, wafer level packaging, Si photonics and optoelectronics, LED, IoT, 5G and emerging technologies, 2.5D and 3D integration technology, and reliability.

The ECTC Program Committee, with more than 200 experts from broad-ranging technical areas, is committed to creating an engaging technical program for all. ECTC typically attracts more than 1,500 attendees from over 25 countries. Last year's 71st ECTC was held online on the MCE Engagez platform due to the pandemic. The virtual conference had over 1690 registrants and 1350 unique attendees from over 55 countries around the world with 346 video presentations featured in 46 technical sessions. Additionally, there were 13 special sessions with 70 invited presentations. The 72nd ECTC will continue with the same tradition of being the premium venue to showcase all the latest developments in the electronic components industry where packaging has become a way to achieve device and system performance scaling.

The 72nd ECTC program will include six parallel technical sessions in the mornings and afternoons over three days, along with other special topic panel discussions to present high-level trends and best practices in the industry. Professional Development Courses (PDCs) will also be offered by world-class experts, enabling participants to broaden their technical knowledge base. The technical program and PDCs will be supplemented by Technology Corner Exhibits, which provide an opportunity for leading companies in the electronic components, materials, and packaging fields to exhibit their latest technologies and products. As the Program Chair of the 72nd ECTC, I invite you to submit an abstract between 250 and 750 words that describes the scope, content, and key points of your proposed technical paper at www.ectc.net. The deadline for abstract and proposal submission is October 4, 2021. Manuscripts conforming to the ECTC format are due by February 19, 2022, for inclusion in the Conference Proceedings. All abstracts and manuscripts must be original, free of commercial content, and non-confidential. On behalf of the ECTC Program Committee, I look forward to seeing you at The Sheraton San Diego Hotel and Marina, San Diego, California, USA at the 72nd ECTC, May 31 - June 3, 2022.

Karlheinz Bock
72nd ECTC Program Chair

Major Topics

Highly rated abstracts are accepted for presentation at the ECTC conference. It is important that authors identify the subcommittees whose topic areas best fit their abstracts. Abstracts should include original and previously unpublished, non-confidential, and non-commercial information on new developments, technology, and knowledge in the areas including, but not limited to, those given below for each technical subcommittee.

Applied Reliability: Reliability of 2D, 2.5D, Si-bridge, 3D, chiplets, WLCSP, FOWLP, FOPLP & heterogeneous integration, interconnect reliability in micro-bump, micro-pillar, Cu-pillar, TSV, RDL, stacked-die, hybrid-bond, flip chip & wire bonded packages, novel reliability test methods, life models, FA techniques & materials characterization, component and board level reliability in computing, HPC, mobile, networking, automotive, power electronics, harsh/hi-temp environments, IoT, sensors, AI, autonomous vehicles, medical, wearable electronics, LEDs, displays and memory.

Assembly and Manufacturing Technology: Assembly and manufacturing challenges for new markets; Die bonding methods and processes; Wafer level process/materials technologies; Die and package singulation manufacturing; New & next generation substrates; Smart factory/manufacturing; Assembly related test/yield hardware development; Integrating advanced thermal solutions in manufacturing: Design/performance, integrating solutions, thermal materials, low stress/high thermal; Process advancements/yield enhancements: Cost of inspection, sampling, metrology, new processes for fine RDL, small via fabrication, transfer/compression/injection mold; Heterogeneous integration and process: chiplets, 3D stacking, bridge technology, large body, warpage management; Shielding/protection technologies and manufacturing and market requirements.

Emerging Technologies: Emerging, novel and unique packaging and material technologies for: soft and intelligent packaging, flexible/stretchable hybrid electronics, implantable biosensors and bioelectronics, extreme harsh environment, green/bio-resorbable packaging, nanomanufacturing, paper sensors/electronics pop-up/origami, MEMS & NEMS, Close-To-Motor high-voltage power electronics, packaging for wide band gap devices, anti-tamper, cryptography, additive manufacturing, packaging for quantum computing and electro-optical integration, recyclable and sustainable electronics packaging, packaging for quantum computing and electro-optical integration, recyclable and sustainable electronics packaging, AI, ML and computer vision for packaging, point-of-care diagnostic packaging, packaging for quantum computing/sensing/communication, and space hardened packaging technologies.

Interconnections: Interconnection Technology and Processing: Fan-out, panel-level, chiplets, SiP, flip-chip, 2.5D/3D, Si/glass/organic interposers, TSV, micro-bump, Cu pillar, wirebonds, high I/O thermo-compression/hybrid bonding, fine-pitch/multi-layer RDL, printable interconnects, flexible substrates, photonic interconnects, quantum interconnects; Interconnection Material, Characterization and Reliability: Conductive/non-conductive adhesives, low temperature solder, underfill, molding compounds, thermal interface materials, thermal/mechanical/electrical tests and reliability; Interconnection physical co-design and architectures for emerging applications: HPC, mobile, 5G, IoT, power and rugged electronics, medical and health, automotive, aerospace, flexible hybrid electronics, micro-LED display.

Materials & Processing: Wafer & panel level packaging materials; Materials for harsh environments; Packaging substrates; Flexible, stretchable, & wearable electronics; Wafer bond/debond materials; TSV; Emerging electronic materials & processes; Novel solder metallurgies; Dielectrics and underfills; Molding compounds; Thermal interface materials; Advanced wirebonding, conductive adhesives.

Packaging Technologies: Architectures, methods, and applications for 2.5 & 3D, TSV & interposer; advanced flip-chip, SiP, CSP, PoP, MEMS, sensors & IoT; automotive & power electronics; bio, medical, flexible & wearable packaging; embedded & advanced substrates; fan-out, wafer & panel level processes; heterogeneous integration.

Photonics: Photonics Components Packaging: for computing, communications, data processing, mobility, healthcare, green energy photonics, agriculture, horticulture, food, environmental, climate and atmosphere monitoring, space, automobile, underwater, industrial, defense, process integration, co-packaging (Photonics – Electronics - Laser Integration), free space optics, microscopy and advanced spectroscopy, 3D printing of micro-optical components for packaging, assembly and manufacturing; Packaging for the quantum photonics world; Packaging of new photonics materials; Optical characterization of packaging components; Equipment and tools for photonics packaging.

RF, High-Speed Components & Systems: 5G/6G, IoT, cloud computing, autonomous vehicles, AI/machine learning; Antennas, sensors, power transfer, EM shielding, wired/wireless communications, RF to THz; Electrical and multi-physics modeling, simulation and characterization of interconnects, components, modules, and heterogeneous integration; Signal/power integrity, chip/package/board co-design.

Thermal/Mechanical Simulation & Characterization: Thermal/mechanical simulation and characterization at component, board, and system levels for all packaging technologies: reliability related modeling including fracture mechanics, fatigue, electromigration, warpage, delamination, moisture, drop, shock and vibration, and modeling for harsh environments (thermal, chemical, etc.); material constitutive relations; chip-package interaction for heterogeneous integration, wafer fabrication and package assembly process related modeling; novel modeling techniques including multi-scale physics, co-design approaches; quantum computing; measurement methodologies, characterization and correlations, model order reduction, sensitivity analysis, optimization, statistical analysis; and application of artificial intelligence on modeling, characterization, and digital twin.

Interactive Presentations: Highly encouraged at ECTC, presenter and attendee often communicate more efficiently here than in oral presentations. Abstracts can relate to any electronics packaging topic. Interactive presentation session papers are published and archived in equal merit with the other ECTC papers.

You are invited to submit an abstract between 250 - 750 words that describes the novelty, scope, content, and key points of your proposed paper via the website at www.ectc.net. Please start your abstract with a first paragraph of no more than 50 words to clearly highlight and summarize the novelty of your work.

Abstracts must be received by October 4, 2021. All abstracts must be submitted electronically at www.ectc.net. You must include the affiliation, contact telephone number, and e-mail address for all authors, besides the mailing address for the presenting author.

If you have any questions, contact:
Karlheinz Bock, 72nd ECTC Program Chair
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Visit the ECTC website (www.ectc.net) for additional conference information.

Call for Professional Development Courses

See page two.

Abstract and Manuscript Submission

You are invited to submit an abstract between 250 - 750 words that describes the novelty, scope, content, and key points of your proposed paper via our website at www.ectc.net. Additional details on how to submit abstracts electronically can be found on the ECTC website under the "Author Info" tab. Submitted abstracts become the property of ECTC, and ECTC reserves the right to publish the abstracts accepted for the conference. ECTC also reserves the right to prohibit, limit, or reject any editing of submitted abstracts. Abstracts accepted for the conference may not be edited until manuscript submission. Abstracts must be received by October 4, 2021. Your submission must be cleared by management and co-authors as applicable and include the affiliation, contact telephone number, and e-mail address for all authors, besides the mailing address for the presenting author. Please select two different program subcommittees in order of preference that should evaluate your submission for acceptance. Authors will be notified of paper acceptance with instructions for publication by December 11, 2021. At the discretion of the Program Committee, submitted abstracts may be considered for Interactive Presentation sessions.

Manuscripts conforming to the ECTC format are due in final form for publication in the Conference Proceedings by February 19, 2022. **Manuscripts not submitted by this date may be removed and replaced in the final program at the discretion of the Program Committee.** The submitted content must be original, previously unpublished, non-confidential, and without commercial content. All submitted manuscripts are checked for plagiarism and excessive self-duplication of previously published work through the IEEE CrossCheck system. For additional information regarding abstract and paper submission, please contact:

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Special Paper Recognition

Best Paper Award: Each year the ECTC selects the best paper whose author(s) receive an ECTC personalized wall plaque and share a check for $2,500.

Best Interactive Presentation Award: Each year the ECTC selects the best Interactive Presentation paper whose author(s) receive an ECTC personalized wall plaque and share a check for $1,500.

Outstanding Paper Award: An outstanding conference paper is also selected for special recognition by the ECTC. The author(s) receive a personalized wall plaque and share a check for $1,000.

Outstanding Interactive Presentation Award: An outstanding Interactive Presentation paper is also selected for special recognition by the ECTC. The author(s) receive a personalized wall plaque and share a check for $1,000.

Intel Best Student Paper Award: Intel Corporation is sponsoring an award for the best paper submitted and presented by a student at ECTC. The winning student will be presented with a wall plaque and a check for $2,500. See next column for details.

Texas Instruments Outstanding Student Interactive Presentation Award: Texas Instruments is sponsoring an award for the best student Interactive Presentation at ECTC. The winning student will be presented with a wall plaque and a check for $1,000.

Technology Corner Exhibits

ECTC invites you to be part of the Technology Corner exhibit and showcase your products and services to engineers and managers from all areas of the microelectronics packaging industry. Over 1,500 attendees are expected for the 72nd ECTC, representing companies from around the world.

Exhibit Dates: June 1 – 2, 2022
For more information contact:
Alan Huffman
ECTC Exhibits Chair
Phone: +1-919-248-9216
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The 2022 Exhibit Application form will be posted online at www.ectc.net under the "Exhibits" section in September 2021. Prospective exhibitors should fill out an application and return to the e-mail addresses above. ECTC exhibit booth allocation is first based on consecutive years of exhibit participation and/or Gold or Platinum Sponsorship. Please contact Alan Huffman at alan.huffman@micross.com for more information or with any questions.

Sponsorship Opportunities to Enhance Your Presence at ECTC

ECTC also offers excellent opportunities for promotion and visibility through sponsorships at platinum, gold and silver levels as well as of badge lanyard, USB flash drive proceedings, media, refreshment breaks, program, and the student reception. Additional information is available at www.ectc.net under "Sponsors". Please contact:

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Call for Professional Development Courses

Proposals are solicited from individuals interested in teaching educational, four-hour long Professional Development Courses (PDCs) on topics described on the previous page. From the proposals received, 18 PDCs will be selected for offering at the 72nd ECTC on Tuesday, May 31, 2022. Each selected course will be given a minimum honorarium of $1,000. In addition, instructors of the selected courses will be offered the speaker discount rate for the conference. Attendees of the PDCs will be offered Continuing Education Units (CEUs). These CEUs are recognized by employers as a formal measure of participation and attendance in "noncredit" self-study courses, tutorials, symposia, and workshops.

Using the format "Course Objectives/Course Outline/Who Should Attend," 200-word proposals must be submitted via the ECTC website at www.ectc.net by October 16, 2021. Authors will be notified of course acceptance with instructions by December 9, 2021.If you have any questions, contact:

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IEEE EPS Society Travel Grant Program

IEEE EPS is pleased to continue the IEEE EPS Travel Grant Program for the 72nd ECTC. The goals of this award are to foster maximum student participation in ECTC and to recognize students with superior ECTC papers.

Description: Grants are available to apply towards actual travel expenses, including airfare, hotel, and meals. Grants will be awarded competitively, based on abstracts submitted by student authors. The student who is named as the primary author of each winning abstract will receive a travel grant.

Eligibility: The competition is open to all full-time graduate students enrolled at an accredited institution in a program of study within the scope of ECTC. The student must be listed as the primary author on the abstract. A maximum of two authors (one per paper) from any one institution will receive a travel grant.

Application Process: To apply, check the "IEEE EPS Society Travel Grant" box in the "Awards" section of the online abstract submission form. Pre-selected abstracts based on technical committee scores will be requested to submit an extended abstract.

Intel Best Student Paper Award

Intel Corporation is sponsoring an award for the best paper submitted and presented by a student at the ECTC. The winning student will be presented with a wall plaque and a check for $2,500.

Eligibility: To be considered for the award, the student must be a full-time student for at least one semester after the conference conclusion. The student must be the lead author and present the paper at the 72nd ECTC. It is the convention at ECTC for the presenter to be listed as the first author. Finalists will be determined by review of the completed manuscripts by the judging committee. Manuscripts will be reviewed for relevance to the competition topics, technical content, and originality. The author of the best student paper will be notified after the conference and must submit an affidavit from the student's faculty advisor certifying that the student meets the eligibility requirements.

Application Process: To enter the Intel Best Student Paper Award competition, please check the "Intel Best Student Paper Award" box in the "Awards" section of the online abstract submission form.

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