

2023, October 2 - 5

34th European Symposium on Reliability of Electron Devices, Failure Physics and Analysis



DIAGORA, congress & exhibition center
Toulouse, FRANCE.



1st CALL FOR PAPERS

ESREF 2023, the 34th European Symposium on Reliability of Electron Devices, Failure Physics and Analysis, will take place in Toulouse (France) from 2nd to 5th October 2023 at *DIAGORA Congress Center*.

This international symposium continues to focus on recent developments and future directions in Quality and Reliability Management of materials, devices and circuits for micro-, nano-, and optoelectronics. It provides a European forum for developing all aspects of reliability management and innovative analysis techniques for present and future electronic applications.

A word from the conference chairs

ESREF 2023 will be held in Toulouse - world center for aeronautics with Airbus assembly line, European capital of the space industry and leader in France for embedded electronic systems. Toulouse, called "Ville rose" (Pink city) for its characteristic architecture based on terra cotta bricks, combines a strong living spirit with a brilliant past. It is the third French university with more than 100,000 students and 147 laboratories. It is definitely turned towards the future with a large number of cutting-edge businesses in aeronautics, information technologies and spatial industries, as well as many research institutes. Hosting ESREF 2023 in this rich environment is a great opportunity since reliability in these particular applications is a very hot topic with strong challenges such as zero ppm failure and harsh environments. For this 34th edition, in addition to the core topics of the conference, we would like to involve the major actors of aeronautics, space and embedded systems industry to provide specific topics such as radiation hardening, very long-term reliability, high/low temperature challenges, obsolescence and counterfeit issues, wide bandgap power devices for the more electric aircraft and other embedded system applications. In the continuity of previous conferences, ESREF 2023 is also hosting several workshops and welcomes new ones related to these specific topics.

We are looking forward to welcoming you for a memorable experience!

Nicolas NOLHIER
ESREF 2023 Chair

Guillaume BASCOUL
ESREF 2023 Vice-Chair

Technical Program Chairs : H  l  ne FREMONT, Nathalie LABAT, Fran  ois MARC

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DEADLINES

10 March 2023 Submission of four-page extended summary to be uploaded at: <http://esref2023.sciencesconf.org>
28 April 2023 Notification of acceptance
2 June 2023 Submission of extended paper

Elsevier Ltd will publish the ESREF 2023 proceedings as a special issue of the *Microelectronics Reliability* journal.

30 June 2023 Upload of final paper to the online Elsevier Editorial System

TECHNICAL PROGRAMME

Papers are requested on the following topics:

A - Quality and Reliability assessment techniques and methods for Devices and Systems

Design for reliability, Built-in reliability, Virtual qualification, Reliability simulation, Advanced models for Reliability prediction, Reliability test structures, Limits to accelerated tests, Screening methods, Yield/reliability relationship, Obsolescence, Counterfeit.

B - Semiconductor Failure Mechanisms & Reliability for Si technologies & Nanoelectronics

Process-related issues, Passivation stability, Hot carriers injection, NBTI, TDDB, High-K dielectrics and gate stacks, Low-K dielectrics and Cu interconnects, Metal migration: mechanical and thermal aspects, Non-volatile and programmable cells, Silicon on Insulator devices, Nano-electronics, Nano-electronic materials for solid state devices.

C - Progress in Failure Analysis: Defect Detection and Analysis

Electron, ion and optical beam techniques, Scanning probe techniques, Static or dynamic techniques, Backside techniques, Acoustic microscopy, Electric or magnetic field based techniques, Electrical, thermal and thermo-mechanical characterization, Sample preparation, construction analysis, Failure analysis: case studies.

D - Reliability of Microwave devices and circuits

Wide band gap semiconductors, Microwave and compound semiconductor devices,

E - Packaging and Assembly Reliability and Failure Analysis

Electrical Modeling & Simulations, Mechanical Modeling & Simulations, 3D / TSV, Flip chip, Advanced substrates, Chip/package interaction.

F - Power Devices and Microelectronic System: Reliability and Failure Analysis

- F1 - Smart-power devices, IGBT, thyristors,
- F2 - SiC and GaN power devices
- F3 - Power Electronic System

G - Photonics Reliability

Solar Cells and Display, Optoelectronics, Organic electronics: OLED, Electronic Ink, TFT

H - MEMS and sensors Reliability

Bio-electronics, Bio-sensors, Nano-Bio-technologies, MEMS and MOEMS, NEMS and nano-objects.

I - Extreme environments and Radiation

ESD-EOS, Latchup
EMC-EMI (integrated circuits, power electronic systems)
Radiation impact on circuits and systems reliability

Tutorials by experts will provide review presentation of relevant topics and **Invited papers** will introduce the mainstream topics.

Workshops organized in correlation with the ESREF conference will give the opportunity to exchange the know-how and field returns on specific topics. For further information concerning the Scientific Program, please contact: esref2023@sciencesconf.org

Exhibition - The Symposium will feature the latest in service providers, equipment manufacturers and suppliers in these fields.

You can enjoy early signups (Fall 2022) and early bird (up to June 2023) discounts. For further information concerning the equipment exhibition, please contact: esref2023-office@sciencesconf.org

Sponsor the event and get advantages of sponsor packages (platinum, gold and silver). Combine sponsorship with early sign up at exhibition and get impressive discounts and advantages. For further information concerning the sponsoring, please contact: esref2023-office@sciencesconf.org

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Conference Website : <http://esref2023.sciencesconf.org> / Contact : esref2023@sciencesconf.org