



Microsanj LLC  
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# Newsletter

May-2022

## NEWS

We are looking forward to the return of in-person events in 2022 and the opportunity to meet with you face-to-face to learn more about the thermal challenges you are facing with your advanced device designs. Two upcoming events at which we will be exhibiting include IMS-2022 in Denver, Colorado in June and IPFA-2022 being held in Singapore in July.

## UPCOMING EVENTS

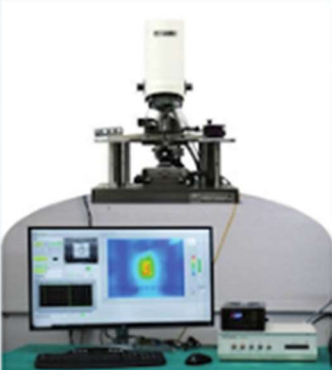
Date	Event
<p>IMS 19-24 June</p>	<div style="display: flex; justify-content: space-between; align-items: flex-start;"> <div style="text-align: center;">  <p><b>IMS</b> <small>Connecting Minds. Exchanging Ideas.</small> (/)</p> </div> <div style="text-align: center;"> <p><b>International Microwave Symposium</b></p> <p>Join Us In-Person: 19-24 June 2022, Denver, CO</p> </div> <div style="text-align: center;">  </div> </div> <p><b>Microsanj</b> will be at <b>Booth 9018 at IMS2022 in Denver, Colorado</b>. Plan to stop by to meet with our technical personnel and learn how our <b>SanjSCOPE™</b> thermal imaging systems can address the thermal challenges you are facing with your advanced microwave device designs. And be sure to sign up for our MicroApps Session: TUMA16 at Show Floor Booth 9110, <b>ADDRESSING THERMAL CHALLENGES IN HIGH SPEED AND HIGH-POWER MICROWAVE DEVICES</b></p> <p><b>Abstract</b></p> <p>Microwave devices are being deployed in mission-critical applications ranging from 5G and Smart Grid networks, to automotive and defense electronics. Devices may also be required to operate in a challenging environment. High temperatures, hot spots and temperature spikes can have a major impact on reliability. Performance requirements are leading to shrinking geometries, new materials and more complex structures. Since high temperatures contribute to MTTF, it is essential that one have a thorough understanding of static and dynamic thermal performance. Fortunately, advancements in characterization techniques are making it easier to gain this understanding to ensure reliability while meeting challenging performance requirements</p> <p>For more information about IMS-2022 see: <a href="https://ims-ieee.org/">https://ims-ieee.org/</a></p>
<p>IPFA 18-20 July</p>	<div style="display: flex; justify-content: space-between; align-items: flex-start;"> <div style="text-align: center;">  <p><b>IPFA</b></p> </div> <div style="text-align: center;"> <p>International Symposium on the Physical and Failure Analysis of Integrated Circuits</p> </div> <div style="text-align: center;"> <p>18th July - 21 July <b>2022</b></p> </div> </div> <p>The largest failure analysis and reliability event in Asia will take place at the Marina Bay Sands in Singapore. Microsanj will be in attendance with a booth displaying the EZ-THERM thermal imaging system.</p> <p>Dustin Kendig, Microsanj Vice-President is an invited speaker at IPFA. His talk entitled: <b>“Submicron Nanosecond Thermal Imaging using Thermoreflectance for Failure Analysis”</b> will show how recent developments in non-invasive thermal imaging techniques can address the growing challenges designers are facing with failure analysis and fault isolation with today’s advanced devices.</p> <p>For more information about IPFA-2022 see: <a href="https://www.ipfa-ieee.org/2022/">https://www.ipfa-ieee.org/2022/</a></p>

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## OTHER ANNOUNCEMENTS

- The following Tech Brief appeared in the May 2022 issue of the Microwave Journal

**TechBrief**



### Thermal Imaging System With Macro- to Nano-Scale Resolution

thermal anomalies that may lead to early failures. Recognizing that traditional techniques cannot fully assess the thermal behavior of these devices, Microsanj has focused on thermal analysis systems that will meet the challenges posed by today's most advanced designs.

The SanjSCOPE™ EZ-THERM series is a compact bench-mountable thermal imaging system that provides the sensitivity, spatial and temporal resolution for designers to fully understand device thermal behavior. With spectral coverage from 365 nm to 1700 nm, GaN HEMTs can be analyzed with a spa-

tial resolution less than 300 nm, and flip-chip mounted microwave devices can be analyzed with thru-the-substrate imaging above 1000 nm. The capability to do infrared macro analysis with better than 10 mK thermal sensitivity and quickly move to nano-scale analysis with thermoreflectance enables designers to capture the smallest hot spots and analyze its characteristics on a nano-scale level.

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**W**ith semiconductor designs pushing submicron features, complex multi-layer structures and new materials, microwave device and circuit designers face growing thermal challenges. Application requirements for increased power, higher frequency and faster switching are leading to higher power densities with rapidly changing thermal events and

- Paper by one of our customers published in Applied Physics Reviews, May 2022  
<https://aip.scitation.org/doi/10.1063/5.0079842>
- **Not yet ready to purchase an advanced thermal imaging system?** Short or Long-Term Lab Services are available. For details see: <https://www.microsanj.com/consulting-servi>



For more information or comments about any of the items mentioned in this NEWSLETTER please contact us at [info@microsanj.com](mailto:info@microsanj.com) or contact your local sales representative: <https://www.microsanj.com/contact>

**We look forward to hearing from you!**