

Thursday March 24, 2022 12:30 p.m.

## The 2021 Harvey Rosten Award

Sponsored by Mentor, a Siemens business

For Outstanding Work in the Field of Thermal Analysis of Electronic Equipment:

### Measuring the RthJC of Power Semiconductor Components Using Short Pulses



Sujay Singh, Andras Vass-Varnai, Joe Proulx

**Sujay Singh** received his Ph.D. degree in physics from The State University of New York at Buffalo, Buffalo, NY, USA, in 2016. Sujay started his career at Fairchild Semiconductor as a Thermal Characterization Reliability Engineer in 2015. He is currently a Senior Principal Reliability Engineer at ON Semiconductor. He is involved in the new product development, environmental testing, lifetime testing, and lifetime modeling of silicon and wide-bandgap power devices. He has authored or coauthored over 20 journal/conference publications. He serves as a peer-reviewer for Physical Review, Applied Physics Letters, and the Journal of Applied Physics. His current research interests include electronic and thermal transport in micro/nanoscale, semiconductor device packaging, reliability, failure analysis, and resistive switching.

**Andras Vass-Varnai** obtained his MSc and PhD degrees in electrical engineering at the Budapest University of Technology and Economics. He started his professional career at the MicReD group of Mentor Graphics as an application engineer in 2007. Andras worked most for over 10 years as a product manager, supporting development projects, such as the DynTIM or the Powertester instruments. Before starting his current role as a global business development manager in Siemens, Andras worked out of Seoul, Korea, supporting the Asian business activities. He is working out of Chicago IL currently, with dedicated focus on the US market growth. His main topics of interest include thermal management of electric systems, advanced applications of thermal transient testing, characterization of TIM materials and reliability testing of high-power semiconductor devices.

**Joe Proulx**, Senior Consultant Engineer for Siemens, Mentor Graphics Corporation and Flomerics since 2005, specializing in thermal and fluid flow analysis. Over 25 years of experience as a thermal engineer in the industry. Extensive computational fluid dynamics (CFD) experience for electronics cooling analysis, and more than 10+ years specializing in thermal transient test measurement for thermal characterization of semiconductors and reliability assessment. Several patents pending in package thermal modeling and validation subjects and regularly contribute to IEEE & SAE conference papers for power electronics reliability and electronics thermal simulation subjects.

#### The Harvey Rosten Award

The Award is for outstanding work, recently published or in the public domain, which advances the analysis or modeling of thermal or thermomechanical effects in electronic equipment or components, including experiments aimed specifically at the validation of numerical models. The award is in the form of a plaque and a \$1000 cash prize. The Award was established by the family and friends of Harvey Rosten, to commemorate his achievements in the field of thermal analysis of electronics equipment, and the thermal modeling of electronics parts and packages. The Award is made annually to encourage innovation and excellence in these and closely related fields.

The recipient is selected by the Selection Committee, made up of eminent practitioners in the electronics-thermal field. The criteria for selection are that the work: represents an advance in thermal analysis or thermal modeling of electronics equipment or components, including experiments aimed specifically at validating numerical models; demonstrates clear application to practical electronics design; demonstrates insight into the physical processes affecting the thermal behavior of electronics components, parts and systems; is innovative in embodying this understanding in either thermal analysis or thermal modeling; takes a pragmatic approach.