



Dr. Dereje  
Agonafer

## UT Arlington Engineering Professor Receives Society Recognition

University of Texas at Arlington Professor of Mechanical Engineering Dereje Agonafer has received the “Thermi” award from the Institute of Electrical and Electronic Engineers’ Components, Packaging and Manufacturing Technology Society. The award honors a history of significant contributions to thermal issues affecting the performance of semiconductor devices, optoelectronics, and microelectromechanical and related systems. The society is the leading international forum for scientists and engineers engaged in the research, design and development of revolutionary advances in microsystems packaging and manufacture.

Thermo/mechanical challenges in electronics packaging have become critical issues as advanced technologies have enabled the fabrication of smaller, faster products. The number of transistors on a single high-density interconnect chip has exceeded one billion. However, increased performance also results in increased heat, which can severely damage, even destroy, a microprocessor if not controlled.

Professor Agonafer was recognized for his efforts in addressing thermo/mechanical challenges in electronic packaging including stacked packaging and the related thermo/mechanical challenges; efforts to reduce thermal resistance due to highly non-uniform chip power distribution, development of a best known method for design of microprocessors based on power and thermal-architectural co-design, thermal challenge related to leakage current, effect of weight of heat sink assembly on mechanical reliability of a wire bonded plastic ball grid array package, bump electromigration and back end design rules, development of constitutive equations for lead free solders and data centers and related energy management.

Professor Agonafer received his Ph.D. from Howard University and joined IBM. After 15 years at IBM, Dr. Dereje Agonafer joined the University of Texas at Arlington in 1999 as Professor and Director of the Electronics, MEMS and Nanoelectronics Systems Packaging Center. He currently advises 16 graduate students, including six Ph.D.’s. Since joining UT Arlington, he has graduated 53 graduate students.

Dr. Agonafer has published more than 100 conference and journal papers and holds eight patents. He is the recipient of several honors, including Howard University’s Distinguished Ph.D. Alumni Award, the ASME Clock Award for Outstanding Contribution in Computer-aided Thermal Management of Electronic Packages, and the ASME International Electronic and Photonic Packaging Division’s award for “Outstanding Contributions to the Area of the Application of the Science and Engineering of Heat Transfer to Electronic and Photonic Packaging.”

Professor Agonafer is a Fellow of the American Society of Mechanical Engineers International and a Fellow of American Association for the Advancement of Science. He is currently on a leave of absence as a Dr. Martin Luther King Visiting Professor in the Mechanical Engineering Department at MIT.