

1 PUBLICATIONS YEAR 1

List of publications in international conferences

- Zoltán Sárkány, András Vass-Várnai, Gusztáv Hantos. Failure Prediction of IGBT Modules Based on Power Cycling Tests. In: Proceedings of Thermal investigations of ICs and Systems (THERMINIC'13), Berlin, Germany, 25-27 September 2013. (in press)
- Enikő Bándy, Árpád Földváry, Márta Rencz. The Effect of Heat Treatment on Spin-On Oxide Glasses in Solar Cell Application. In: Proceedings of Thermal investigations of ICs and Systems (THERMINIC'13), Berlin, Germany, 25-27 September 2013. (in press)
- András Timár, Márta Rencz. Logi-thermal simulation using high-resolution temperature dependent delay models. In: Proceedings of Thermal investigations of ICs and Systems (THERMINIC'13), Berlin, Germany, 25-27 September 2013. (in press)
- Gergely Nagy, Péter Horváth, András Poppe. Practical aspects of thermal transient testing in live digital circuits. In: Proceedings of Thermal investigations of ICs and Systems (THERMINIC'13), Berlin, Germany, 25-27 September 2013. (in press)
- Ferenc Ender, Gusztáv Hantos, Dirk Schweitzer, Péter G. Szabó. Thermal Characterization of Multichip Structures. In: Proceedings of Thermal investigations of ICs and Systems (THERMINIC'13), Berlin, Germany, 25-27 September 2013. (in press)

Special sessions at conferences

A special NANOTHERM session was held during the 19th International Workshop on Thermal Investigations of ICs and Systems, THERMINIC, in Berlin, Germany, on 27th September 2013. 4 scientific papers related to NANOTHERM subjects were presented and discussed by project partners and external speakers. This session was a very good opportunity to discuss and compare the different approaches, and will serve to gain new ideas to achieve the goals of the NANOTHERM project. The following papers were presented:

- S. Noijen, S. Fritsche, A. S. Klein, A. Poppe, G. kums, O. van der Sluis “Integrating advanced Interconnect technologies in a high power lighting application: First steps”
- J. Heilmann; I. Nikitin, D. May, K. Pressel, B. Wunderle “reliability of advanced thermal interface technologies based on sintered die-attach materials”
- Y. Ni, J. Ordóñez-Miranda, Y. Chalopin, S. Volz “ Modelling of graphene and few-layer graphene heat spreaders for hot-spot cooling”
- C. Zanden, X. Luo, L. Ye, J. Liu « Fabrication and characterization of a metal matrix polymer fibre composite for thermal interface material applications »

2 PUBLICATION YEAR 2

List of publications in international conferences

- Boron nitride nanofiber and indium composite based thermal interface materials for electronics heat dissipation applications, Xin, Luo; Yong, Zhang; Carl, Zandén; Murali, Murugesan; Yu, Cao; Lilei, Ye; Johan, Liu, Journal of Materials Science and Engineering – Materials in Electronics March 14 2014, DOI: 10.1007/s10854-014-1880-8 and J Mater Sci Mater Electron 2014;25,2333.

- M. Casa, N. Wang, S. Huang, L. Ye, P. Ciambelli and J. Liu, "Development and characterization of graphene-enhanced thermal conductivity adhesives", 2014 International Conference on Electronic Packing Technology (ICEPT 2014), Aug.12-15, 2014, Chendu, China. Poster.
- P.Zhang, N. wang, C. Zandén, L. Ye, Y. Fu and J. Liu, "Thermal characterization of power devices using graphene-based film", 2014 Electronic Components & Technology Conference (ECTC), Orlando, FL, USA, May 27-30, 2014 IEEE 64th, pp. 459-463. Oral presentation.
- J. Zhang, V.G. Kouznetsova, O. van der Sluis, M.G.D. Geers. Multiscale analysis of residual stresses during processing of nano-based interconnect materials. World Congress on Computational Mechanics WCCM XI, July 20-25 2014, Barcelona, Spain, oral presentation
- J. Zhang, V.G. Kouznetsova, O. van der Sluis, M.G.D. Geers. Multiscale modelling of nano-based interconnect materials for LED packages. Sixteenth Engineering Mechanics Symposium, Graduate School on Engineering Mechanics, October 28-29 2013, Lunteren, The Netherlands, poster presentation.
- Felba J., Fałat T., Mościcki A., „*Nano sized silver for electronic packaging*”, Proc. of 13th IEEE conference on nanotechnology (IEEE-Nano) 2013, Beijing, China, 5-8 Aug. 2013
- Fałat T., Płatek B., Zawierta M., Felba, J., „*Numerical study on thermal conductivity of nanomaterials - coarse Grained Molecular Dynamics Approach*”, Proc. of 13th IEEE conference on nanotechnology (IEEE-Nano) 2013, Beijing, China, 5-8 Aug. 2013
- Urbański K.J., Fałat T., Matkowski P., Szczerba M., Felba J., Mościcki, A. „*Investigation of electrical properties of contacts made of materials based on sintered nano-Ag particles*”, Proc. of 37th International Spring Seminar on Electronics Technology (ISSE) 2014, Dresden, Germany, 7-11 May 2014
- Matkowski P.K., Fałat T., Żaluk Z., Felba J., Moscicki A. „*Structure of the Thermal Interface connection made of sintered nano silver*”, Proc. of 37th International Spring Seminar on Electronics Technology (ISSE) 2014, Dresden, Germany, 7-11 May 2014
- Płatek B., Fałat T., Felba J. „*Evaluation of the interfacial resistance between carbon nanotube and silicon by using molecular dynamics simulations*”, Proc. of 37th International Spring Seminar on Electronics Technology (ISSE) 2014, Dresden, Germany, 7-11 May 2014
- Fałat T., Matkowski P., Żaluk Z., Felba J., Mościcki A. „*Mechanical strength of joints based on nano-Ag sintering phenomena*”, Proc. of 37th International Spring Seminar on Electronics Technology (ISSE) 2014, Dresden, Germany, 7-11 May 2014

Special sessions at conferences

A poster and exhibition booth was setup at EUROSIME, IEEE International Conference on Thermal, Mechanical and Multi-Physics Simulation and Experiments in Microelectronics and Microsystems, Ghent, Belgium, on April 7-9th 2014

A special NANOTHERM session was held during the 20th International Workshop on Thermal Investigations of ICs and Systems, THERMINIC, in London, Greenwich, UK on 26th September 2014. 6 scientific papers related to NANOTHERM subjects were presented and discussed by project partners and external speakers. This session was a very good opportunity to discuss and compare the different approaches, and will serve to gain new ideas to achieve the goals of the NANOTHERM project. The following papers were presented:

- "In Situ Thermal Reliability Testing Methodology for Novel Thermal Interface Materials" Gusztáv Hantos, Márta Rencz, László Juhász (BME – VIKING)
- "Modeling of the Effective Thermal Conductivity of Sintered Porous Pastes" Jose Ordonez-Miranda, Ivan Nikitin, Varvara G. Kouznetsova, Marrit Hermens, Sebastian Volz (ECP – IFX – TuE)

- “Electrically Conductive Thermal Interface Materials Based on Vertically Aligned Carbon Nanotubes Mats” Daon Joffrey, Gérard Cibien, Elodie Leveugle, Christophe Galindo, Afshin Ziaei, Shuangxi Sun, Wei Mu, Lilei Ye, Yifeng Fu, Jinbo Bai, Johan Liu (TRT, ECP, SHT, Chalmers)
 - “A Novel Contactless Technique for Thermal Conductivity Determination: Two-Laser Raman Thermometry” J. Sebastian Reparaz, Emigdio Chavez-Angel, Markus R. Wagner, Bartłomiej Graczykowski, Jordi Gomis-Bresco, Francesc Alzina, Clivia M. Sotomayor-Torres (ICN)
 - “Mechanical Properties of Porous Silver Material Depended on Sintering Parameters” Ivan Nikitin, Klaus Pressel (IFX)
 - “Enhanced Heat Spreader Based on Few-layer Graphene Intercalated with Silane-functionalization Molecules” Haoxue Han, Yuriy A. Kosevich, Yong Zhang, Johan Liu, Yifeng Fu, Lilei Ye, Sebastian Volz (ECP, Chalmers, SHT)
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