Asigurarea Calității – Quality Assurance, ISSN 1224–5410
Vol. XVIII, Issue 72, October-December 2012
Pages 12 - 18

Defectarea componentelor electronice, fiabilitatea sistemului și ingineria de investigație

Titu-Marius I. BĂJENESCU[1], Marius BÂZU[2]
[1] C. F. C., La Conversion, Switzerland; [2] National Institute for Research and Development in Microtechnologies, IMT-Bucharest, Romania
tmbajenesco@bluewin.ch

Abstract
After a short introduction, the paper presents the problems concerning the reliable systems with non-reliable components, failure mechanisms and reliability problems, failure analysis, root causes, and localization of structural defect, packaging and globally competitive education.

Keywords: reliability, forensic engineering, failure analysis, failure mechanisms, physics-of-failure, packaging.

References:

[1] https://portail.telecom-retagne.eu/publi/public/download. jsp?id_publication=8696.
[2] Muratet, S., Conception, caractérisation et modélisation: Fiabilité prédictive de MEMS à actionnement électrothermique, Thèse de doctorat, Institut National des Sciences Appliquées de Toulouse, 24.11.2005.
[3] Palego, C., Composants MEMS RF pour les têtes de réception RF reconfigurables, Thèse de doctorat, Faculté des sciences et techniques de Limoges, 19 janvier 2006.
[4] de Nardi, C., Techniques d'analyse de défaillance de circuits intégrés appliquées au descrambling et à la lecture de données sur des composants mémoires non volatiles, Institut National des Sciences Appliquées, 25 mai 2009.
[5] Pareaud, Th., J.-C. Fabre et M.-O. Kilijian, „Conception orientée composant de mécanismes de tolérance aux fautes en vue de leur application en ligne", RenPar'18/SympA'2008/CFSE'6, Fribourg, 11 au 13 février 2008.
[6] Stanisavljevic, M., On the Dependability of Nanoscale Circuits and Systems: Methodologies and Circuit Architectures, Thèse de doctorat no. 4352(2009), Ecole Polytechnique Fédérale de Lausanne (EPFL), Suisse.
[7] http://www.cnrs.fr/comitenational/doc/rapport/2010/08_conj_2010.pdf.
[8] Evtodiev, I., Stări de impurități și defecte în materiale semiconductoare stratificate GaSe și InSe, Teză de doctor habilitat în științe fizico-matematice, Universitatea tehnică a Republicii Moldova, Chișinău, 17.9.2010, http://www.cnaa.md/files/theses/2010/16582/igor_evtodiev_thesis.pdf.
[9] Băjenescu, T.-M. I., M. Bâzu, Component Reliability for Electronic Systems, Boston and London, Artech House, 2009.
[10] Dennies, D. P., „The Organization of a Failure Investigation," Journal of Failure Analysis and Prevention, vol. 3, nr 2, June 2003.

[11] Venkataraman, S., „Diagnosis Meets Physical Failure Analysis: What is Needed to Succeed?,” Proceedings of IEEE ITC International Test Conference 2004, p. 1442.
[12] Henderson, C. L., „Advanced to Failure and Yield Analysis,” Overview of a 2 days course organized by Semitracks Inc., www.semitracks.com/courses/fa-course.htm
[13] Foucard, G., Taux d’erreurs dues aux radiations pour des applications implémentées dans des FPGAs à base de mémoire SRAM : prédictions versus mesures, Thèse de doctorat, Université de Grenoble, 2010-06-11.
[14] Gauthier, F., „La maintenabilité, une étude qui peut rapporter gros,” Mesures, Février 2002, pp. 31-34.