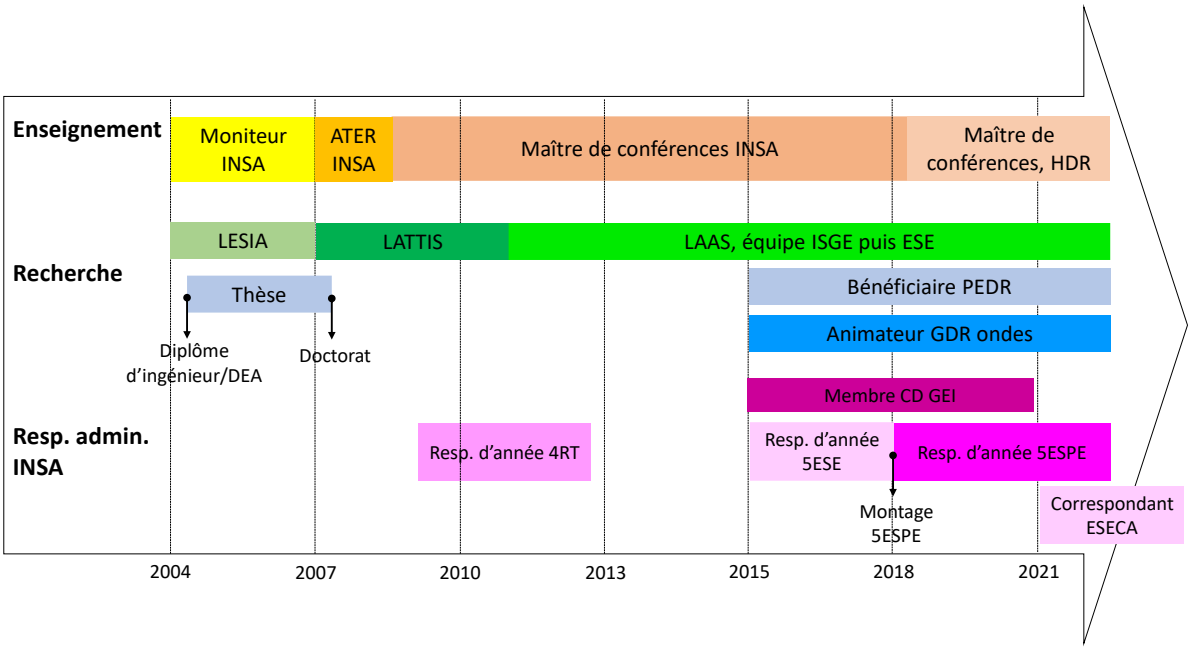
I. Curriculum Vitae : synthèse

Maître de conférences (HDR - qualifié) 63ème section CNU - INSA de Toulouse - depuis septembre 2008. Bénéficiaire de la PEDR.

Synthèse du parcours professionnel



Activités d'enseignement

INSA de Toulouse, depuis 2004 :

- Disciplines (tout niveau) : électronique analogique et numérique, microélectronique, traitement de signal, télécommunications, informatique matérielle, compatibilité électromagnétique
- Pédagogies utilisées : traditionnelle et active (apprentissage par problèmes/projets)

Autres établissements :

- Disciplines : compatibilité électromagnétique
- Etablissements : ENSEEIHT, Ecole Nationale des Mines de Saint-Etienne

Activités de recherche

Thématiques :

- Compatibilité électromagnétique
- Robustesse et fiabilité des composants

Pilotage de la recherche :

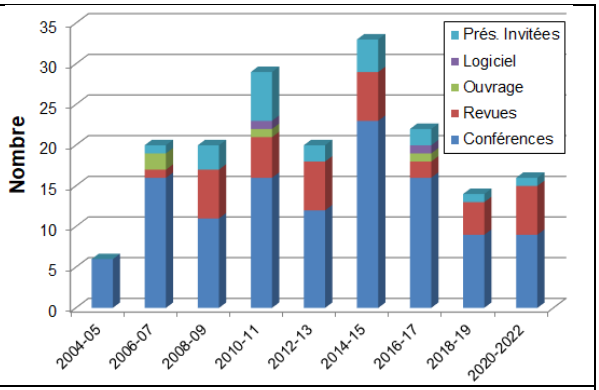
- En 2009, lancement et pilotage d'une nouvelle activité de recherche « CEM à long terme » avec l'obtention d'un financement ANR Jeunes Chercheurs
- 2010-12, responsable scientifique du projet Région Midi-Pyrénées ROSIE

- 2012-15, responsable scientifique pour le LAAS du projet ANR e-Mata-Hari
- 2020-21, responsable scientifique du projet R&T CNES Nanoscan
- Depuis 2021, responsable scientifique pour le LAAS du WP3 du laboratoire commun SEMA (NXP, LAPLACE, LAAS)

Valorisation, diffusion et rayonnement :

Publications depuis 2004 :

- Revues internationales : 35
- Revues francophones : 2
- Conférences internationales : 96
- Conférences nationales : 21
- Contribution à des ouvrages : 4
- Présentations invitées / tutoriaux : 20
- Logiciels : 2



Animation scientifique :

Comité d'organisation de conférences :

- EMC compo 09
- CEM 2023

Organisation de sessions spéciales/tutoriaux dans 3 conférences

Animateur du GT5 du GDR Ondes depuis 2015

Rayonnement scientifique :

- Chercheur invité à Carleton University (Ottawa) en 2008 (2 mois)
- 20 présentations invitées (workshop, école d'été, conférences)

Activités de relecture scientifique, expertises :

- Comité de lecture de revues : régulièrement
- Comité scientifique de conférences : 8
- Expertises dossiers : R&D IWT Flandres
- Jury de thèse : 2

Participation à des projets de recherche :

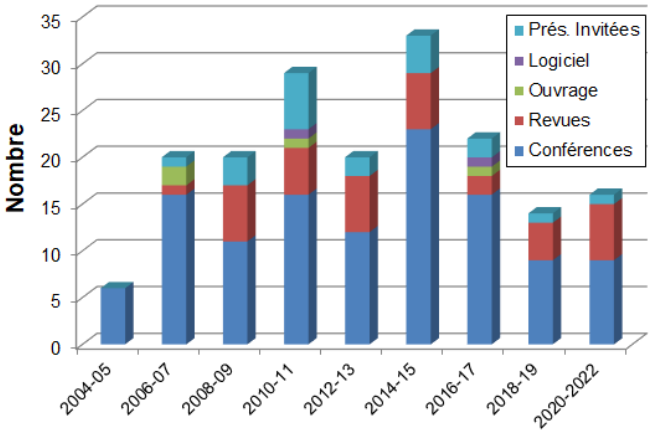
- Européens : 2
- Nationaux : 3
- IRT : 2
- Régionaux :3
- Industriels (incluant CIFRE) : 8

Encadrement scientifique :

- Ingénieurs : 2
- Stages Master 2 : 11
- Doctorants : 11

II. Liste des publications

Type de publication	Nombre
Revues internationales	35
Revues francophones	2
Conférences internationales	96
Conférences nationales	21
Contribution à des ouvrages	4
Présentations invitées / tutoriaux	20
Logiciels	2



Ouvrages – Contributions à ouvrage

2006

[OUV1] « Maîtrise de la CEM – Technologie Réglementation – Normes », Les Référentiels Dunod, pp. 4.1.11.5.1-4.1.11.5.7, février 2006, 7 pages, ISBN 2-10-020415-7, 28e complément.

[OUV2] S. Bendhia, M. Ramdani, E. Sicard, « Electromagnetic Compatibility – Techniques for Low Emission and Susceptibility », Springer, 2006, pp.442 – 451, ISBN 0-387-26600-3.

2011

[OUV3] E. Sicard, **A. Boyer**, "IC-EMC v2.5 User's Manual", INSA editor, ISBN 978-2-87649-061-1, October 2011, online at www.ic-emc.org.

2017

[OUV4] **A. Boyer**, E. Sicard, " Basis of Electromagnetic Compatibility of Integrated Circuits - A modeling approach using IC-EMC", Presses Universitaires du Midi, Oct. 2017, ISBN 978-2-8107-0522-1.

Revues internationales

2007

[RI1] **A. Boyer**, E. Sicard, S. Bendhia, « Characterization of the Electromagnetic Susceptibility of Integrated Circuits using a Near Field Scan », Electronic Letters, vol. 43, no. 1, pp.15-16, January 2007, 10.1049/el:20073130.

2008

[RI2] **A. Boyer**, L. Roy, E. Sicard, B. Tamer, "New Cube Probe Structures for an Integrated Near Field Scanner Module", Electronic Letters, vol. 44, no.11, pp.667-669, May 2008, 10.1049/el:20080836.

[RI3] L. Bouhouch, S. Ben Dhia, **A. Boyer**, E. Sicard, M. Fadel, "Effect of Ferromagnetic Material on the Reduction of Parasitic Emission in Near Field", Ferroelectrics vol. 371, no. 1, pp. 133-138, Taylor & Francis Group, October 2008, LLC ISBN 0015-0193.

[RI4] A. Alaeldine, N. Lacrampe, **A. Boyer**, R. Perdriau, F. Caignet, M. Ramdani, E. Sicard, M. Drissi, "Comparison among Emission and Susceptibility Reduction Techniques for Electromagnetic Interference in Digital Integrated Circuits", Microelectronics Journal, Elsevier, vol. 39, no. 12, pp. 1728-1735, December 2008, 10.1016/j.mejo.2008.02.022.

2009

[RI5] M. Ramdani, E. Sicard, **A. Boyer**, S. Ben Dhia, J. J. Whalen, T. Hubing, M. Coenen, O. Wada, "The Electromagnetic Compatibility of Integrated Circuits – Past, Present and Future", IEEE Transactions on Electromagnetic Compatibility, vol. 51, no. 1, pp. 78-99, February 2009, 10.1109/TEMC.2008.2008907.

[RI6] **A. Boyer**, A. C. Ndoye, S. Ben Dhia, L. Guillot, B. Vrignon, "Characterization of the Evolution of IC Emissions after Accelerated Aging", IEEE Transactions on EMC, vol. 51, no. 4, pp 892 – 900, November 2009, 10.1109/TEMC.2009.2033577.

2010

[RI7] S. Ben Dhia, **A. Boyer**, B. Li, A. C. Noye, "Characterization of the Electromagnetic Modelling drifts of a nanoscale IC after Accelerated Life Tests", Electronic Letters, vol. 46, no. 4, pp. 278-279, February 2010, 10.1049/EL.2010.2885.

[RI8] B. Li, **A. Boyer**, S. Ben Dhia, C. Lemoine, "Ageing effect on electromagnetic susceptibility of a phase locked loop", Microelectronics Reliability, Vol. 50, no. 9-11, pp. 1304-1308, September 2010, 10.1016/j.microrel.2010.07.100.

2011

[RI9] B. Li, N. Berbel, **A. Boyer**, S. Ben Dhia, R. Fernandez Garcia, « Study of the impact of hot carrier injection to immunity of MOSFET to electromagnetic interferences », Microelectronics Reliability, vol. 51, no. 9-11, pp. 1557-1560, September 2011, 10.1016/j.microrel.2011.06.010.

[RI10] N. Berbel, R. Fernandez Garcia, I. Gil, B. Li, **A. Boyer**, S. Ben Dhia, « Experimental verification of the usefulness of Nth power law MOSFET model under hot carrier injection wear out », Microelectronics Reliability, vol. 51, no. 9-11, pp. 1564-1567, September 2011, 10.1016/j.microrel.2011.06.041.

[RI11] R. Fernandez Garcia, I. Gil, **A. Boyer**, S. Ben Dhia, B. Vrignon, « A New Approach to Modeling the Impact of EMI on MOSFET DC Behavior », IEICE Transactions on Electronics, vol.E94-C, no.12, pp.1906-1908, December 2011, 10.1587/transele.E94.C.1906.

2012

[RI12]* S. Ben Dhia, **A. Boyer**, B. Vrignon, M. Deobarro, T. V. Dinh, "On-Chip Noise Sensor for Integrated Circuit Susceptibility Investigations", IEEE Transactions on Instrumentation and Measurement, vol. 61, no. 3, pp. 696-707, March 2012, 10.1109/TIM.2011.2172116.

[RI13] S. Ben Dhia, **A. Boyer**, B. Vrignon, M. Deobarro, « IC Immunity Modeling Process Validation using On-Chip Measurements », Journal of Electronic Testing, vol. 28, no. 3, pp. 339–348, April 2012, DOI 10.1007, s10836-012-5294-3.

[RI14] J.F. Wu, E. Sicard, **A. Boyer**, S. Ben Dhia, J.C. Li, R.J. Shen, "Enhancing accuracy of low-dropout regulator susceptibility extraction with on-chip sensors", Electronics Letters, vol. 48, no. 11, pp. 649-650, May 2012, 10.1049/el.2012.0407.

[RI15] **A. Boyer**, S. Ben Dhia, B. Li, C. Lemoine, B. Vrignon, "Prediction of Long-term Immunity of a Phase-Locked Loop", Journal of Electronic Testing, vol. 28, no. 6, pp 791-802, Dec. 2012, 10.1007/s10836-012-5335-y.

2013

[RI16] J. Wu, **A. Boyer**, J. Li, S. Ben Dhia, R. Shen, "Characterization of Changes in LDO Susceptibility After Electrical Stress", IEEE Transactions on Electromagnetic Compatibility, vol. 55, no. 5, pp. 883 - 890, Feb. 2013, 10.1109/TEMC.2013.2242471

[RI17] S. Ben Dhia, **A. Boyer**, "Long-term Electro-Magnetic Robustness of Integrated Circuits: EMRIC research project", Microelectronic Reliability, vol. 53, no. 9-11, pp 1266-1272, September-November 2013, 10.1016/j.microrel.2013.08.016.

[RI18] J. Wu, **A. Boyer**, J. Li, S. Ben Dhia, B. Vrignon, "LDO regulator DC characteristic and susceptibility prediction after electrical stress ageing", Microelectronic Reliability, vol. 53, no. 9-11, pp 1273-1277, September-November 2013, 10.1016/j.microrel.2013.07.124.

2014

[RI19]* **A. Boyer**, S. Ben Dhia, B. Li, N. Berbel, R. Fernandez-Garcia, "Experimental Investigations on Electrical Stress Impact on Integrated Circuit Electromagnetic Emission", IEEE Transactions on Electromagnetic Compatibility, vol. 56, no 1, pp. 44-50, Feb. 2014, 10.1109/ 10.1109/TEMC.2013.2272195.

[RI20] **A. Boyer**, S. Ben Dhia, « Effect of Aging on Power Integrity and Conducted Emission of Digital Integrated Circuits », Journal of Low Power Electronics (JOLPE), vol. 10, no. 1, March 2014, 10.1166/jolpe.2014.1307.

[RI21] J. Wu, **A. Boyer**, J. Li, B. Vrignon, S. Ben Dhia, E. Sicard, R. Shen, "Modeling and Simulation of LDO Voltage Regulator Susceptibility to Conducted EMI", IEEE Transactions on Electromagnetic Compatibility, vol. 56, no. 3, pp. 726-735, June 2014, 10.1109/TEMC.2013.2294951.

2015

[RI22]* H. Huang, **A. Boyer**, S. Ben Dhia, "Analysis and Modelling of Passive device degradation for a long-term electromagnetic emission study of a DC-DC converter", Microelectronics Reliability, vol. 55, no. 9-10, pp. 2061-2066, June 2015, 10.1016/j.microrel.2015.06.058.

[RI23] H. Huang, **A. Boyer**, S. Ben Dhia, "Electronic counterfeit detection based on the measurement of electromagnetic fingerprint", Microelectronics Reliability, Vol. 55, no 9-10, pp. 2050-2054, July 2015, 10.1016/j.microrel.2015.07.008.

[RI24] A. Durier, A. Bensoussan, M. Zerarka, C. Ghfiri, **A. Boyer**, H. Frémont, "A Methodologic Project to characterize and model COTS Component Reliability", Microelectronics Reliability, Elsevier, vol. 55, no. 9-10, pp.2097-2102, July 2015, 10.1016/j.microrel.2015.06.140.

2016

[RI25]* **A. Boyer**, B. Vrignon, M. Cavarroc, "Modeling Magnetic Near-Field Injection at Silicon Die Level", IEEE Transactions on Electromagnetic Compatibility, vol. 58, no 1, pp. 257-268, February 2016, 10.1109/TEMC.2015.2486041.

2018

[RI26] N. El Belghiti Alaoui, **A. Boyer**, P. Tounsi, A. Viard, "New defect detection approach using near electromagnetic field probing of high density PCBAs", Microelectronic Reliability, Elsevier, vol. 88-90, pp. 288-293, Sept. 2018, 10.1016/j.microrel.2018.07.090.

[RI27]* C. Ghfiri, **A. Boyer**, A. Durier, S. Ben Dhia, «A new Methodology to build ICEM-CE models for complex Integrated Circuits», IEEE Transactions on

Electromagnetic Compatibility, vol. 60, no 5, pp. 1500-1509, October 2018, 10.1109/TEMC.2017.2767084.

[RI28]* N. El Belghiti Alaoui, **A. Boyer**, P. Tounsi, A. Viard, "Upgrading In-Circuit Test of high density PCBAs using electromagnetic measurement and Principal Component Analysis", Journal of Electronic Testing: Theory and Application, vol. 34, no 11, pp.749-762, Dec. 2018, 10.1007/s10836-018-5763-4.

2019

[RI29]* C. Ghfiri, **A. Boyer**, A. Bensoussan, A. Durier, S. Ben Dhia, "A new methodology for EMC prediction of integrated circuits after aging", IEEE Transactions on Electromagnetic Compatibility, vol. 61, no 2, pp. 572-581, April 2019, 10.1109/TEMC.2018.2819722.

2021

[RI30] **A. Boyer**, S. Ben Dhia, "Low-Cost Broadband Electronic Coupler for Estimation of Radiated Emission of Integrated Circuits in TEM Cell", IEEE Trans. on Electromagnetic Compatibility, vol. 63, no 2, pp. 636-639, April 2021, 10.1109/TEMC.2020.3021135.

[RI31]* S. Serpaud, **A. Boyer**, S. Ben Dhia, F. Coccetti, "Fast and Accurate Near-Field Measurement Method Using Sequential Spatial Adaptive Sampling (SSAS) Algorithm", IEEE Transactions on Electromagnetic Compatibility, vol. 63, no. 3, pp. 858-869, June 2021, 10.1109/TEMC.2020.3025547.

[RI32] E. L. Lara, A. A. Constante, J. Benfica, F. Vargas, **A. Boyer**, S. Ben Dhia, A. Gleinser, G. Winkler, B. Deutschmann, "Impact of place and route strategy on FPGA electromagnetic emission", Microelectronic Reliability, Elsevier, vol. 126, pp. 1-7, Nov. 2021, 10.1016/j.microrel.2021.114333.

[RI33]* **A. Boyer**, N. Nolhier, F. Caignet, S. Ben Dhia, "Closed-Form Expressions of Electric and Magnetic Near-Fields for the Calibration of Near-Field Probes", IEEE Transactions on Instrumentation and Measurements, Early Access, vol. 70, pp. 1-15, November 2021, 10.1109/TIM.2021.3126376.

2022

[RI34]* S. Serpaud, **A. Boyer**, S. Ben Dhia, F. Coccetti, "Efficiency of Sequential Spatial Adaptive Sampling Algorithm to Accelerate Multifrequency Near-Field Scanning Measurement", IEEE Transactions on Electromagnetic Compatibility, Early Access, pp. 1-11, Jan. 2022, 10.1109/TEMC.2021.3136096.

[RI35] F. Escudié, F. Caignet, N. Nolhier, **A. Boyer**, « Frequency Based Method Investigation to Extract an ESD Protection Dynamic SPICE Model From TLP Measurement", IEEE Transactions on Electromagnetic Compatibility, vol. 64, no. 1, pp. 47-57, Feb. 2022, 10.1109/TEMC.2021.3106770.

Revues francophones

[RF1] **A. Boyer**, « Prédire la Susceptibilité des Circuits aux Agressions Electromagnétiques », Electronique – Le mensuel des ingénieurs de conception, No 189, mars 2008.

[RF2] **A. Boyer**, « Tribune – En CAO, il faut prédire l'immunité des circuits aux IEM », Electronique – Le mensuel des ingénieurs de conception, No 188, février 2008.

Conférences internationales

2005

[CI1] **A. Boyer**, C. Labussière, O. Pigaglio, J. W. Tao, E. Sicard, C. Lochot, « Methodology of Calibration of Miniature Near-Field Probes for Quantitative Characterization of IC radiation », ICONIC 2005 – Barcelone, Spain, pp. 311 – 316, 05-07 June 2005.

[CI2] E. Sicard, **A. Boyer**, A. Tankielun, « On the Prediction of Near Field Microcontroller Emission », IEEE Symposium on EMC – Chicago – August 2005, pp. 695 – 699.

[CI3] E. Lamoureux, **A. Boyer**, S. Ben Dhia, E. Sicard, « Investigations on a Conducted Aggression inside a Digital Integrated Circuits », EMC Compo 05, Munich, Germany, 29 – 31 November 2005, proc. Pp. 87 – 91.

[CI4] C. Labussière, C. Lochot**, A. Boyer**, « Characterization of the Radiation from a 16-bit Microcontroller by using miniature Near-Field Probes », EMC Compo 05, Munich, Germany, 29 – 31 November 2005, pp. 33 – 38.

[CI5] **A. Boyer**, E. Sicard, J.L. Levant, « On the Prediction of Near-Field Microcontroller Emission », EMC Compo 05, Munich, Germany, 29 – 31 November 2005, pp. 216 – 220.

2006

[CI6] N. Lacrampe, **A. Boyer**, « Original Methodology for Integrated Circuit ESD Immunity combining VF-TLP and Near Field Scan Testing », 3rd EOS/ESD/EMI Workshop – Toulouse – 18-19 May 2006, pp. 51 – 54.

[CI7] **A. Boyer**, E. Sicard, S. Bendhia, « Near Field Scan Immunity Measurement with RF Continuous Wave », EMC Europe 06 – Workshop Immunity – Barcelona – 4 – 8 September 2006.

2007

[CI8] A. Alaeldine, **A. Boyer**, R. Perdriau, M. Ramdani, E. sicard, M. Drissi, « A near field injection model including power losses for susceptibility prediction in IC », EMC Workshop 07, Paris, 14-15 June 2007.

[CI9] A. Alaeldine, **A. Boyer**, R. Perdriau, M. Ramdani, E. Sicard, M. Drissi, « A Near Field Injection Model for Susceptibility Prediction in Integrated Circuits », ICONIC 2007, Saint Louis, USA, 27 – 29 June 2007.

[CI10] S. Ben Dhia, E. Sicard, Y. Mequignon, **A Boyer**, JM Dienot, « Thermal Influence on 16-bits Microcontroller Emission », IEEE Symposium on EMC, Hawaii, 6 – 13 July 2007

[CI11] **A. Boyer**, S. Bendhia, E. Sicard, « Modelling of a Mixed-Signal Processor Susceptibility to Near-Field Aggression », IEEE Symposium on EMC, Hawaii, 6 – 13 July 2007

[CI12] **A. Boyer**, S. Bendhia, E. Sicard, « Modelling of a Direct Power Injection Aggression on a 16-bit Microcontroller Input Buffer », EMC Compo 07, Torino, 28 – 20 November 2007, pp. 35 – 39

[CI13] **A. Boyer**, S. A. Boulingui, S. Bendhia, E. Sicard, S. Baffreau, « A Methodology for predicting Disturbances due to Near Field Chip to Chip Coupling », EMC Compo 07, Torino, 28 – 20 November 2007, pp. 301 – 306

[CI14] G. F. Bouesse, N. Ninon, G. Sicard, M. Renaudin, **A. Boyer**, E. Sicard, « Asynchronous logic Vs Synchronous logic: Concrete Results on Electromagnetic Emissions and Conducted Susceptibility », EMC Compo 07, Turin, 28 – 20 November 2007, pp. 99 – 103.

2008

[CI15] S. Ben Dhia, A. C. Ndoye, **A. Boyer**, L. Guillot, B. Vrignon, « IC Emission Spectrum Drifts after Burn-in Cycles », Asia-Pacific EMC Week, Singapore, 19 – 23 May 2008

[CI16] **A. Boyer**, E. Sicard, « IC-EMC, a demonstration freeware for predicting Electromagnetic Compatibility of Integrated Circuits », Asia-Pacific EMC Week, Singapore, 19 – 23 May 2008.

[CI17] **A. Boyer**, M. Fer, L. Courau, E. Sicard, « Modelling of the Susceptibility of 90 nm Input Output Buffer », Asia-Pacific EMC Week, Singapore, 19 – 23 May 2008.

[CI18] **A. Boyer**, E. Sicard, M. Fer, L. Courau, "Electrical Characterization of a 64 Ball Grid Array Package", EMC Europe 2008 (EMC Europe 2008), Hambourg, Germany, 8-12 September 2008.

2009

[CI19] C. Ndoye, **A. Boyer**, E. Sicard, S. Serpaud, F. Lafon, "A Concurrent Engineering Platform for Modeling IC emission and immunity", EMC Kyoto 2009, July 20-24 2009.

[CI20] B. Li, A. C. Ndoye, **A. Boyer**, S. Ben Dhia, "Characterization of the electromagnetic robustness of a nanoscale CMOS integrated circuit", EMC Compo 2009, Toulouse, November 17 – 19 2009.

[CI21] B. Tamer, L. Roy, **A. Boyer**, "Development of EMC/EMI Characterization Tool in LTCC Format", EMC Compo 2009, Toulouse, November 17 – 19 2009.

[CI22] M. Deobarro, B. Vrignon, S. Ben Dhia, **A. Boyer**, "Use of on-chip sampling sensor to evaluate conducted RF disturbances propagated inside an integrated circuit", EMC Compo 2009, Toulouse, November 17 – 19 2009.

[CI23] M. J. Kuo, T. C. Lin, **A. Boyer**, "Integrated Circuit Emission Model Extraction Based on Fuzzy Logic Systems", EMC Compo 2009, Toulouse, November 17 – 19 2009.

2010

[CI24] B. Li, **A. Boyer**, S. Ben Dhia, C. Lemoine, "Ageing effect on immunity of a mixed signal IC", 2010 Asia-Pacific International Symposium on Electromagnetic Compatibility, April 12 – 16, 2010, Beijing, China

[CI25] S. Baffreau, S. Akue Boulingui, C. Dupoux, E. Sicard, N. Bouvier, B. Vrignon, **A. Boyer**, "A New Methodology to Measure Electromagnetic Interferences in 3G Mobile Platform", 2010 Asia-Pacific International Symposium on Electromagnetic Compatibility, April 12 – 16, 2010, Beijing, China.

[CI26] E. Sicard, **A. Boyer**, "An Educational Approach to Electromagnetic Compatibility of Integrated Circuits", 8th European Workshop on Microelectronics Education, May 10-12, 2010, Darmstadt, Germany.

[CI27] B. Li, **A. Boyer**, S. Ben Dhia, C. Lemoine, "Ageing effect on electromagnetic susceptibility of a phase-locked-loop", ESREF 2010, October 2010, Italy.

[CI28] **A. Boyer**, B. Li, S. Ben Dhia, C. Lemoine, "Impact of Aging on the Immunity of a Mixed Signal Circuit", EMC Europe 2010, 13 – 17th September 2010, Poland.

2011

[CI29] S. Ben Dhia, **A. Boyer**, B. Vrignon, M. Deobarro, « IC immunity modelling process validation using on-chip measurements", 12th IEEE Latin-American Test Workshop (LATW2011), Porto de Galinhas, Brazil, March 27th-30th, 2011.

[CI30] **A. Boyer**, S. Ben Dhia, B. Li, C. Lemoine, B. Vrignon, « Prediction of Long-Term Immunity of a Phase-Locked Loop", 12th IEEE Latin-American Test Workshop (LATW2011), Porto de Galinhas, Brazil, March 27th-30th, 2011.

[CI31] **A. Boyer**, B. Li, S. Ben Dhia, C. Lemoine, B. Vrignon, "Development of an Immunity Model of a Phase-Locked Loop", 2011 Asia-Pacific International Symposium on Electromagnetic Compatibility, May 16 – 19, 2011, Jeju Island, Korea.

[CI32] B. Vrignon, M. Deobarro, **A. Boyer**, S. Ben Dhia, "Bulk Current Injection Modelling and validation on passive loads and an active circuit", 2011 Asia-Pacific International Symposium on Electromagnetic Compatibility, May 16 – 19, 2011, Jeju Island, Korea.

[CI33] B. Li, N. Berbel, **A. Boyer**, S. Ben Dhia, R. Fernández-García, "Study of the impact of hot carrier injection to immunity of MOSFET to electromagnetic interferences", ESREF 2011, October 2011, Bordeaux, France.

[CI34] **A. Boyer**, S. Ben Dhia, C. Lemoine, B. Vrignon, "An On-Chip Sensor for Time Domain Characterization of Electromagnetic Interferences", 8th International Workshop on electromagnetic Compatibility of Integrated Circuits (EMC Compo 2011), November 6 – 9, 2011, Dubrovnik, Croatia.

[CI35] **A. Boyer**, S. Ben Dhia, C. Lemoine, B. Vrignon, "Construction and Evaluation of the Susceptibility Model of an Integrated Phase-Locked Loop", 8th International Workshop on electromagnetic Compatibility of Integrated Circuits (EMC Compo 2011), November 6 – 9, 2011, Dubrovnik, Croatia.

[CI36] N. Berbel, R. Fernández-García, I. Gil, B. Li, S. Ben Dhia, **A. Boyer**, "An alternative approach to model the Internal Activity of integrated circuits", 8th International Workshop on electromagnetic Compatibility of Integrated Circuits (EMC Compo 2011), November 6 – 9, 2011, Dubrovnik, Croatia.

[CI37] E. Sicard, **A. Boyer**, "Enhancing Engineers Skills in EMC of Integrated Circuits", 8th International Workshop on electromagnetic Compatibility of Integrated Circuits (EMC Compo 2011), November 6 – 9, 2011, Dubrovnik, Croatia.

2012

[CI38] E. Sicard, **A. Boyer**, "A hands-on approach to make electromagnetic compatibility of integrated circuits relevant to engineers and students », 9th European Workshop on Microelectronics Education (EWME), May 9-11, 2012, Grenoble, France.

[CI39] **A. Boyer**, S. Ben Dhia, C. Lemoine, B. Vrignon, « Characterizing Circuit Susceptibility with On-chip Sensors », 2012 Asia-Pacific International Symposium on Electromagnetic Compatibility, May 21 – 25, 2012, Singapour.

[CI40] J. F. Wu, J. C. Li, **A. Boyer**, E. Sicard, S. Ben Dhia, R. J. Shen, « EMC Susceptibility of Low-Dropout Voltage Regulator using a Test Chip », 2012 Asia-Pacific International Symposium on Electromagnetic Compatibility, May 21 – 25, 2012, Singapour.

2013

[CI41] **A. Boyer**, S. Ben Dhia, « Effect of Aging on Power Integrity of Digital Integrated Circuits", 14th IEEE Latin-American Test Workshop (LATW2013), Cordoba, Argentina, April 2nd-5th, 2013.

[CI42] **A. Boyer**, S. Ben Dhia, "Effect of Electrical Stresses on Digital Integrated Circuits Power Integrity", IEEE Workshop on. Signal and Power Integrity (SPI), Paris, France, May 2013.

[CI43] J. Wu, **A. Boyer**, J. Li, R. Shen, S. Ben Dhia, "Effect of Electrical Stresses on the Susceptibility of a Voltage regulator", EMC Europe 2013, Brugge, Belgium, September 2013.

[CI44] J. Wu, **A. Boyer**, J. Li, S. Bendhia, B. Vrignon, "LDO regulator DC characteristic and susceptibility prediction after electrical stress ageing", 24th European Symposium on Reliability of Electron Devices, Failure Physics and Analysis ESREF 2013, 30th September – 4th October 2013.

[CI45] S. Ben Dhia, **A. Boyer**, "Long-term Electro-Magnetic Robustness of Integrated Circuits: EMRIC research project", 24th European Symposium on Reliability of Electron Devices, Failure Physics and Analysis ESREF 2013, 30th September – 4th October 2013.

[CI46] **A. Boyer**, S. Ben Dhia, "Characterization and Modeling of Electrical Stresses on Digital Integrated Circuits Power Integrity and Conducted Emission", 9th International Workshop on electromagnetic Compatibility of Integrated Circuits (EMC Compo 2013), December 15 – 18, 2013, Nara, Japan. **Prix du meilleur papier**.

[CI47] S. Ben Dhia, **A. Boyer**, "Long-term Electro-Magnetic Robustness of Integrated Circuits: EMRIC research project", 9th International Workshop on electromagnetic Compatibility of Integrated Circuits (EMC Compo 2013), December 15 – 18, 2013, Nara, Japan.

[CI48] Oliveira, J. Benfica, L. M. Bolzani Poehls, F. Vargas, J. Lipovetzky, A. Lutenberg, E. Gatti, F. Hernandez, **A. Boyer**, "Reliability Analysis of an On-Chip Watchdog for Embedded Systems Exposed to Radiation and EMI", 9th International Workshop on electromagnetic Compatibility of Integrated Circuits (EMC Compo 2013), December 15 – 18, 2013, Nara, Japan.

2014

[CI49] S. Ben Dhia, **A. Boyer**, « Design of On-Chip Sensors to Monitor Electromagnetic Activity in ICs: Towards On-line Diagnosis and Self-Healing", 15th IEEE Latin-American Test Workshop (LATW2014), Fortazela, Brazil, March 12nd-15th, 2014.

[CI50] **A. Boyer**, H. Huang, S. Ben Dhia, "Impact of thermal aging on emission of a buck DC-DC converter", 2014 International Symposium on Electromagnetic Compatibility EMC'14 Tokyo, May 13th - 16th 2014, Tokyo, Japan.

[CI51] C. Crémoux, **A. Boyer**, K. Ben Dhia, " Reliability of active RFID tag immersed in water for anti-kidnapping applications", IEEE-APS Topical Conference on Antennas and Propagation in Wireless Communications (IEEE APWC 2014), Aruba, August 3rd-9th 2014.

[CI52] **A. Boyer**, B. Vrignon, J. Shepherd, M. Cavarroc, " Evaluation of the Near-Field Injection Method at Integrated Circuit Level", EMC Europe 2014, Goteborg, Sweden, September 1st-4th 2014.

[CI53] H. Huang, **A. Boyer**, S. Ben Dhia, "The detection of counterfeit integrated circuit by the use of electromagnetic fingerprint", EMC Europe 2014, Goteborg, Sweden, September 1st-4th 2014.

[CI54] H. Huang, **A. Boyer**, S. Ben Dhia, B. Vrignon, "Susceptibility Analysis of an Operational Amplifier Using On-Chip Measurement", EMC Europe 2014, Goteborg, Sweden, September 1st-4th 2014.

[CI55] L. Chusseau, R. Omarouayache, J. Raoult, S. Jarrix, P. Maurine, K. Tobichy, **A. Boyer**, B. Vrignon, J. Shepherd, T. H. Le, M. Berthier, L. Rivière, B. Robisson, A. L. Ribotta, " Electromagnetic Analysis, Deciphering and Reverse Engineering of Integrated Circuits (E-MATA HARI)", 22nd IFIP/IEEE International Conference on Very Large Scale Integration (VLSI-SoC 2014), October 6-8, 2014, Mexico.

2015

[CI56] **A. Boyer**, S. Ben Dhia, " Long-term Electromagnetic Robustness of Integrated Circuits, Challenge and Trends", MINAPAD 2015, April 21-23 2015, Grenoble, IMAPS.

[CI57] H. Huang, **A. Boyer**, S. Ben Dhia, B. Vrignon, "Prediction of Aging Impact on Electromagnetic Susceptibility of an Operational Amplifier", 2015 Asia-Pacific International Symposium on Electromagnetic Compatibility, May 25 – 29, 2015, Taipei.

[CI58] V. Tomasevic, **A. Boyer**, S. Ben Dhia, " Development of an On-Chip Sensor for Substrate Coupling Study in Smart Power Mixed ICs", 2015 Asia-Pacific International Symposium on Electromagnetic Compatibility, May 25 – 29, 2015, Taipei.

[CI59] **A. Boyer**, B. Vrignon, J. Shepherd, M. Cavarroc, "Near-Field Injection at Die Level", 2015 Asia-Pacific International Symposium on Electromagnetic Compatibility, May 25 – 29, 2015, Taipei.

[CI60] V. Tomasevic, **A. Boyer**, S. Bendhia, A. Steinmar, B. Weiss, E. Seebacher, P. Rust, "Coupling Study in Smart Power Mixed ICs with a dedicated On-Chip sensor", EMC Europe 2015, August 2015, Dresden, Germany.

[CI61] H. Huang, **A. Boyer**, S. Ben Dhia, " Passive device degradation models for a electromagnetic emission robustness study of a buck DC-DC converter", EMC Europe 2015, August 2015, Dresden, Germany.

[CI62] H. Huang, **A. Boyer**, S. Ben Dhia, "Analysis and Modelling of Passive device degradation for a long-term electromagnetic emission study of a DC-DC converter", 26th European Symposium on Reliability of Electron Devices, Failure Physics and Analysis (ESREF 2015), Toulouse, France, Oct. 2015.

[CI63] H. Huang, **A. Boyer**, S. Ben Dhia, "Electronic counterfeit detection based on the measurement of electromagnetic fingerprint", 26th European Symposium on Reliability of Electron Devices, Failure Physics and Analysis (ESREF 2015), Toulouse, France, Oct. 2015.

[CI64] **A. Boyer**, M. Cavarroc, "Improvement of the Spatial Resolution of Near-Field Immunity Maps", EMC Compo 2015, Edimburgh, Scotland, November 2015.

[CI65] V. Tomasevic, **A. Boyer**, S. Ben Dhia, "Bandgap Failure Study Due to Parasitic Bipolar Substrate Coupling In Smart Power Mixed ICs", EMC Compo 2015, Edimburgh, Scotland, November 2015.

[CI66] E. Sicard, **A. Boyer**, P. Fernandez Lopez, A. Zhou, N. Marier, F. Lafon, "EMC performance analysis of a Processor/Memory System using PCB and Package-On-Package", EMC Compo 2015, Edimburgh, Scotland, November 2015.

[CI67] A. Ramanujan, E. Sicard, **A. Boyer**, J.L. Levant, C. Marot, F. Lafon, "Developing a Universal Exchange Format for Integrated Circuit Emission Model – Conducted Emissions", EMC Compo 2015, Edimburgh, Scotland, November 2015.

[CI68] E. Sicard, **A. Boyer**, " EMC modeling of Integrated Circuits using IC-EMC", EMC Compo 2015, Edimburgh, Scotland, November 2015.

2016

[CI69] **A. Boyer**, " Improving Spatial Resolution of Immunity Maps by Post-Processing", 2016 Asia-Pacific International Symposium on Electromagnetic Compatibility and Signal Integrity, May 18 – 21, 2016, Shenzhen.

[CI70] C. Ghfiri, **A. Boyer**, A. Durier, C. Marot, S. Ben Dhia, "Construction of an Integrated Circuit Emission Model of a FPGA", 2016 Asia-Pacific International Symposium on Electromagnetic Compatibility and Signal Integrity, May 18 – 21, 2016, Shenzhen. **Prix du meilleur papier étudiant**.

[CI71] S. Ben Dhia, **A. Boyer**, "A Review of Research on the Effect of Aging on the EMC of Integrated Circuits", 2016 Asia-Pacific International Symposium on Electromagnetic Compatibility and Signal Integrity, May 18 – 21, 2016, Shenzhen.

[CI72] **A. Boyer**, H. Huang, S. Ben Dhia, "Predicting the Risk of Non-Compliance to EMC Requirements During the Life-Cycle", 2016 Asia-Pacific International Symposium on Electromagnetic Compatibility and Signal Integrity, May 18 – 21, 2016, Shenzhen.

[CI73] A. Durier, **A. Boyer**, G. Duchamp, "A methodologic project to characterize and model COTS components EMC behavior after ageing", 2016 Asia-Pacific International Symposium on Electromagnetic Compatibility and Signal Integrity, May 18 – 21, 2016, Shenzhen.

2017

[CI74] **A. Boyer**, C. Ghfiri, M. Gonzalez Sentis, A. Durier, " Modeling methodology of the conducted emission of a DC-DC converter board", EMC Compo 2017, Saint Petersburg, Russia, July 2017.

[CI75] **A. Boyer**, C. Ghfiri, M. Gonzalez Sentis, A. Durier, " Study of the thermal aging effect on the conducted

emission of a synchronous buck converter", EMC Compo 2017, Saint Petersburg, Russia, July 2017.

[CI76] C. Ghfiri, **A. Boyer**, A. Durier, S. Ben Dhia, C. Marot, "Methodology of modeling of the internal activity of a FPGA for conducted emission prediction purpose", EMC Compo 2017, Saint Petersburg, Russia, July 2017.

[CI77] S. Serpaud, **A. Boyer**, C. Ghfiri, A. Durier, "Proposal for combined conducted and radiated emission modeling for Integrated Circuit", EMC Compo 2017, Saint Petersburg, Russia, July 2017.

[CI78] N. Lacrampe, S. Serpaud, **A. Boyer**, S. Tran, " Radiated Suceptibility Investigation of Electronic Board from Near Field Scan Method", EMC Compo 2017, Saint Petersburg, Russia, July 2017.

[CI79] **A. Boyer**, C. Ghfiri, M. Gonzalez Sentis, A. Durier, " Study of the thermal aging effect on the conducted emission of a synchronous buck converter", EMC Europe 2017, Angers, France, September 2017.

[CI80] C. Ghfiri, **A. Boyer**, A. Durier, S. Ben Dhia, C. Marot, "Methodology of modeling of the internal activity of a FPGA for conducted emission prediction purpose", EMC Europe 2017, Angers, France, September 2017.

2018

[CI81] N. El Belghiti Alaoui, **A. Boyer**, P. Tousi, A. Viard, "New testing approach using near electromagnetic field probing intending to upgrade in-circuit testing in high density PCBAs", 27th IEEE North Atlantic Test Workshop, Essex, Vermont, USA, May 7-9, 2018. **Prix Significant Scientific Contribution**.

[CI82] C. Ghfiri, **A. Boyer**, A. Durier, S. Ben Dhia, C. Marot, "Modeling the internal activity of a FPGA for conducted emission prediction purpose", 2018 Joint IEEE EMC & APEMC Symposium, Singapour, May 14-17 2018.

[CI83] N. El Belghiti Alaoui, **A. Boyer**, P. Tounsi, A. Viard, " New defect detection approach using near electromagnetic field probing for high density PCBAs", 29th European Symposium on Reliability of Electron Devices, Failure Physics and Analysis (ESREF 2018), Aalborg, Denmark, 1-5 Oct. 2018.

2019

[CI84] N. El Belghiti Alaoui, P. Tounsi, **A. Boyer**, A. Viard, "Detecting PCB Assembly Defects using Infrared Thermal Signatures", 26th conference MIXDES, Rzeszow, Poland, 27-29 June 2019. **Prix Outstanding Paper Award**.

[CI85] **A. Boyer**, "A Rigorous Method to extrapolate Radiated Susceptibility from Near-Field Scan Immunity", EMC Europe 2019, 2-6 Sept 2019, Barcelona, Spain.

[CI86] S. Serpaud, **A. Boyer**, S. Ben Dhia, " Sequential adaptive sampling algorithm to reduce the near-field measurement time", EMC Europe 2019, 2-6 Sept 2019, Barcelona, Spain.

[CI87] N. El Belghiti Alaoui, A. Cassou, P. Tounsi, **A. Boyer**, A. Viard, " Using infrared thermal responses for PCBA production tests: Feasibility study ", 30th European Symposium on Reliability of Electron Devices, Failure Physics and Analysis (ESREF 2019), Aalborg, Denmark, 23-26 Sept. 2019.

[CI88] S. Serpaud, **A. Boyer**, S. Ben Dhia, "Optimized algorithm to reduce the near-field measurement time on FPGA device", 12th International Workshop on the Electromagnetic Compatibility of Integrated Circuits (EMC Compo 2019), Hangzhou, China, Oct. 21-23 2019.

[CI89] **A. Boyer**, E. Sicard, " A Case Study to apprehend RF Susceptibility of Operational Amplifiers", 12th International Workshop on the Electromagnetic Compatibility of Integrated Circuits (EMC Compo 2019), Hangzhou, China, Oct. 21-23 2019.

2020

[CI90] S. Chetouani, S. Serpaud, **A. Boyer**, S. Ben Dhia, « Fast and efficient approach to predict EMC immunity of complex equipment after a component change », EMC Europe 2020, 23-25 Sept 2020, Virtual Conference.

[CI91] **A. Boyer**, S. BenDhia, A. Durier, “A new Voltage Measurement Probe for investigating Radiated Immunity Test”, EMC Europe 2020, 23-25 Sept 2020, Virtual Conference.

2021

[CI92] E. L. Lara, A. A. Constante, J. Benfica, F. Vargas, **A. Boyer**, S. Ben Dhia, A. Gleinser, G. Winkler, B. Deutschmann, “Preliminary Study on the Impact of Place and Route Strategy on FPGA Electromagnetic Emission”, 2021 Argentine Conference on Electronics (CAE), 2021, pp. 88-92, doi: 10.1109/CAE51562.2021.9397567.

[CI93] **A. Boyer**, N. Nolhier, F. Caignet, S. Ben Dhia, “Anticipating Common-Mode Conducted Emission of DC-DC Converter from Electric Near-Field Scan”, 2021 Joint IEEE International Symp. On EMC, SI & PI, and EMC Europe, August 2021, Virtual Conference.

[CI94] S. Chetouani, **A. Boyer**, S. BenDhia, S. Serpaud, A. Durier, « A Technique to Assess Conducted Immunity of an Electronic Equipment after an Obsolete Integrated Circuit Change », EMC Compo 2021 (reporté en 2022 cause Covid), 8-10 March 2022, Virtual Conference.

2022

[CI95] F. Ruffat, F. Caignet, **A. Boyer**, “Frequency model extraction to perform prediction of PCB systems exposed to Pulse perturbations”, accepted in 2022 International ESD Workshop (IEW), 3-6 May 2022, Taiwan, Virtual Conference.

[CI96] B. Guendouz, K. Abouda, **A. Boyer**, S. Ben Dhia, P. Perruchoud, “A Simple Analytical Approximation to evaluate Noise Levels and Maximum Coupling Frequencies During DPI Simulations on BMS IC”, Accepted

in Asia Pacific International Symposium on Electromagnetic Compatibility, May 8-11 2022, Beijing, China, Virtual Conference.

Conférences nationales

2005

[CN1] **A. Boyer**, S. Bendhia, J.L. Levant, M. Ramdani, B. Vrignon, « Modélisation d'un Boîtier TQFP144 par mesures et simulation », 4èmes JFMMA & TELECOM 2005, Rabat, Maroc, 23 - 25 mars 2005.

2006

[CN2] E. Sicard, **A. Boyer**, G. Peres, « Un Logiciel Dédié à la Prédiction du Comportement des Circuits Intégrés en Compatibilité Electromagnétique de 1 MHz à 5 GHz », CEM06, Saint-Malo, avril 2006.

[CN3] **A. Boyer**, E. Sicard, S. Bendhia, E. Lamoureux, « Immunité d'Inverseurs CMOS en Champ Proche », CEM06, Saint-Malo, avril 2006, pp. 323 – 324.

[CN4] **A. Boyer**, S. Bendhia, « Design d'un Agresseur Champ Proche dédié à l'Etude CEM des System-in-Package », JNRDM06 – Rennes – France – 10 -12 mai 2006.

2007

[CN5] **A. Boyer**, « Caractérisation et Modélisation de la Susceptibilité d'un Circuit Intégré par une Méthode de Scan Champ Proche », Journée l'école doctorale GEET, Toulouse, 8 mars 2007.

[CN6] L. Bouhouch, **A. Boyer**, « Amélioration des Performances CEM d'un Microcontrôleur à l'aide d'un Film de Matériau Ferromagnétique », 5èmes JFMMA & TELECOM 07, Fès, Maroc, 14 – 16 mars 2007.

[CN7] **A. Boyer**, S. Akue Boulingui, E. Sicard, S. Baffreau, « Méthodologie de Prédiction des Risques d'Interférences dans un Couplage Puce à Puce », 5èmes JFMMA & TELECOM 07, Fès, Maroc, 14 – 16 mars 2007.

[CN8] E. Sicard, S. Baffreau, S. A. Boulingui, **A. Boyer**, « System-In-Package Integration of Third-Generation Mobile Phones: Some EMC Challenges», 2EMC 2007, Rouen, France, 18 – 19 octobre 2007.

2008

[CN9] S. Ben Dhia, A. C. Ndoye, **A. Boyer**, L. Guillot, B. Vrignon, « Dérives du Spectre d'Emission d'un composant Mixte après Vieillissement Accéléré », CEM08, 20 – 23 mai 2008, Paris, France.

2009

[CN10] A. C. Ndoye, **A. Boyer**, E. Sicard, S. Serpaud, F. Lafon, "Une plateforme collaborative de service en modélisation CEM des Composants", Telecom 2009, Agadir, 11-13 Mars 2009.

2010

[CN11] E. Sicard, **A. Boyer**, "IC-EMC: A Dedicated environment for predicting electromagnetic compatibility of integrated circuits", 2EMC 2010, Rouen, 18 – 19 Novembre 2010.

[CN12] E. Sicard, **A. Boyer**, "Une approche éducative de la compatibilité électromagnétique des circuits intégrés », JPCNFM 2010, 22 – 24 Novembre 2010, Saint Malo.

2012

[CN13] E. Sicard, **A. Boyer**, " Retour d'expérience d'une formation Eurodots en compatibilité électromagnétique des circuits intégrés », JPCNFM 2012, 28-30 novembre 2012, Saint Malo.

2014

[CN14] V. Tomasevic, **A. Boyer**, S. Ben Dhia, " Développement d'un capteur sur puce afin d'étudier le couplage parasite dans les circuits intégrés de type "Smart Power"", 17e Colloque International et Exposition sur la Compatibilité Electromagnétique CEM2014, Clermont-Ferrand, 1-3 juillet 2014.

[CN15] H. Huang, **A. Boyer**, S. Ben Dhia, " Impact du vieillissement thermique sur l'émission d'un convertisseur Buck", 17e Colloque International et Exposition sur la Compatibilité Electromagnétique CEM2014, Clermont-Ferrand, 1-3 juillet 2014.

2015

[CN16] E. Sicard, **A. Boyer**, "IC-EMC - Simulation of Electromagnetic Compatibility of Integrated Circuits", Salon Microwave & RF 2015, Paris.

2016

[CN17] C. Ghfiri, **A. Boyer**, A. Durier, S. Ben Dhia, "Construction d'un modèle ICEM pour prédire l'émission électromagnétique d'un FPGA", 18e Colloque International et Exposition sur la Compatibilité Electromagnétique CEM2016, Rennes, 11-13 juillet 2016.

[CN18] **A. Boyer**, "Amélioration de la résolution spatiale de scan champ proche en injection", 18e Colloque International et Exposition sur la Compatibilité Electromagnétique CEM2016, Rennes, 11-13 juillet 2016.

[CN19] **A. Boyer**, " Caractérisation et modélisation de l'effet du vieillissement sur l'intégrité de signal d'un buffer d'horloge utilisé dans un calculateur aéronautique", ANADEF 2016, Toulouse.

2021

[CN20] **A. Boyer**, A. Durier, S. Ben Dhia, "Une nouvelle sonde de mesure de tension induite pour l'investigation en immunité rayonnée", 20e Colloque International et Exposition sur la Compatibilité Electromagnétique CEM2021, Lyon, Virtuel, 13-15 avril 2021.

[CN21] S. Chetouani, **A. Boyer**, S. Ben Dhia, S. Serpaud, « Application des méthodes de mesures indirectes de paramètres " S " en vue de la gestion de l'obsolescence des composants en immunité conduite », 20e Colloque International et Exposition sur la Compatibilité Electromagnétique CEM2021, Lyon, Virtuel, 13-15 avril 2021.

Présentations invitées & Workshops

2007

[PIW1] S. Ben Dhia, **A. Boyer**, « Electromagnetic compatibility of integrated circuits». One day tutorial, Feng Chia University (FCU), July 16th, 2007, Taiwan.

2008

[PIW2] **A. Boyer**, S. Ben Dhia, « Fiabilité des circuits intégrés face aux agressions électromagnétiques », ANADEF 2008, Port d'Albret, France

[PIW3] **A. Boyer**, S. Ben Dhia, A. C. Ndoye, "EMC/EMI Issues for DSM: New Challenges", Workshop on Long Term Reliability in DSM, Noordjwiik (Netherland), October 3rd, 2008.

2009

[PIW4] S. Ben Dhia, **A. Boyer**, "Still EMC Compliant?", Workshop on Long Term Reliability in DSM, Arcachon, October 9th, 2009.

2010

[PIW5] **A. Boyer**, "Introduction to the modeling and simulation of electromagnetic compatibility of integrated circuits", Tutorial, 2010 Asia-Pacific International Symposium on Electromagnetic Compatibility, April 12th, 2010, Beijing, China.

[PIW6] **A. Boyer**, « Résultats du projet R&T CNES : CEM et vieillissement des composants », CCT MCE, Tutorial Décharges Electrostatiques (ESD) : du composant au système, Toulouse, 15 décembre 2010.

2011

[PIW7] **A. Boyer**, S. Ben Dhia, "Initiation to the modeling and simulation of susceptibility of integrated circuits to electromagnetic interferences", Tutorial, 2011 Asia-Pacific International Symposium on Electromagnetic Compatibility, May 16th, 2011, Jeju Island, Korea.

[PIW8] S. Ben Dhia, **A. Boyer**, "La CEM des Circuits Intégrés", Présentation invitée à l'école d'été du GT6 (CEM) du GDR Ondes, ENS Cachan, 30 août au 2 septembre 2011.

[PIW9] **A. Boyer**, E. Sicard, « IC Immunity Modeling », Tutorial, 2011, EMC Compo 2011, November 6th 2011, Dubrovnik, Croatia.

[PIW10] **A. Boyer**, « Scan champ proche pour l'injection localisée de perturbations – Robustesse électromagnétique », Workshop E-SAFE, LAAS-CNRS, 8 décembre 2011, Toulouse, France.

2012

[PIW11] **A. Boyer**, « Scan champ proche pour l'injection localisée de perturbations pour l'analyse de l'immunité des circuits intégrés », Séminaire CEM – Aide à la conception d'équipements électroniques – NEXIO, LAAS-CNRS, Toulouse, 4 avril 2012.

[PIW12] **A. Boyer**, « Investigation de l'immunité des circuits intégrés par la méthode DPI », Séminaire CEM – Ingénierie d'essais – NEXIO, LAAS-CNRS, Toulouse, 13 novembre 2012.

2014

[PIW13] **A. Boyer**, « Fiabilité électromagnétique des COMPOSANTS NUMERIQUES ET systèmes électroniques à long terme », DAS SE2L, Journée Thématique « Evolutions technologiques dans le domaine de l'électronique numérique (composants), impacts vis-à-vis des applications embarquées » - 18 septembre 2014 - Toulouse.

[PIW14] L. Chusseau, **A. Boyer**, B. Vrignon, J. Shepherd, « E-Mata-Hari Project », Freescale Fritech, 4 décembre 2014.

2015

[PIW15] **A. Boyer**, B. Vrignon, "Couplage Electromagnétique sur Circuits Intégrés », Journée champ proche, GDR Ondes, LAAS-CNRS, 19 juin 2015.

[PIW16] **A. Boyer**, "Analysis and modelling of passive device degradation for a long-term electromagnetic emission study of a DC-DC converter", EMC Compo 2015, Edimburgh, Scotland, November 2015.

2016

[PIW17] **A. Boyer**, "Détection de circuits intégrés contrefaits par mesure de l'empreinte électromagnétique", CCT MCE, Obsolescence des composants électroniques Actions et Réactions, Toulouse, 23 juin 2016.

2017

[PIW18] **A. Boyer**, "Learning EMC of ICs with IC-EMC", EMC Europe 2017, Angers, France, September 2017.

2018

[PIW19] **A. Boyer**, "Predict long-term evolution of EMC of ICs", NXP EMC Workshop, 23 mai 2018.

2021

[PIW20] F. Ruffat, F. Caignet, **A. Boyer**, « Modèle fréquentiel pour la modélisation des protections non linéaires des systèmes électroniques visant à prédire

l'impact d'agressions transitoires de forte puissance », 8e Journées d'études Electromagnétisme et Guerre Electronique (EMGE), Toulouse, France, 14 et 15 décembre 2021 (reporté en juin 2022 cause Covid).

Logiciels

[LO1] IC-EMC, a freeware dedicated to electromagnetic compatibility of integrated circuits. Version 2.5, 2011, www.ic-emc.org.

[LO2] IC-EMC, a freeware dedicated to electromagnetic compatibility of integrated circuits. Version 2.9, 2017, www.ic-emc.org.

III. Projets de recherche

Année	Nom	Durée (mois)	Financement	Responsabilité	Partenaires
2007-10	EPEA (EMC Platform for Embedded Applications)	36	FUI – 100 k€	Participant	Airbus, EADS-IW, INSA de Toulouse, Nexio, ATMEL, IRSEEM-ESIGELEC, Thales, Humirel, Siemens VDO, ESEO
2007-10	CNES Nanospace – Eval. de la fiabilité des composants submicroniques	36	R&T CNES – 30 k€/an	Porteur et participant	CNES, INSA Toulouse, LAAS-CNRS, IMS Bordeaux
2008-11	EMRYC – (ElectroMagnetic ReliabilitY of integrated Circuits)	24	Région Midi-Pyrénées – 35 k€/an	Porteur et participant	CNES, Freescale, Nexio, INSA Toulouse
2009-13	EMRIC (Long term ElectroMagnetic Robustness of nanoscale Integrated Circuits)	48	ANR Jeunes Chercheurs – 228 k€	Porteur – responsable work package, encadrement thèse et ingénieur	INSA Toulouse
2010-12	ROSIE (Robustesse des OScillateurs aux Inteférences Electromagnétiques)	24	Région Midi-Pyrénées – 90 k€/an	Porteur	INSA Toulouse, LAAS, Freescale Semiconductor
2012-15	E-Mata-Hari (Analyse électromagnétique, déchiffrement et ingénierie inverse de circuits intégrés)	36	ANR, prog. Ingénierie Numérique et Sécurité – 104 k€	Responsable work package, encadrement ingénieur	LAAS-CNRS, IES Montpellier, LIRRM, CEA Tech, Freescale Semiconductor, Safran Morpho
2012-15	AUTOMICS (Pragmatic approach to parasitic-aware optimization of electronic ICs for automotive)	36	Europe FP7 – 250 k€	Participant, co-encadrant de thèse, encadrement ingénieur	LAAS-CNRS, UPMC, EPFL, Continental, Valeo, AMS, ST Microelectronic, ADMOS
2013-14	Etude CEM d'un module caméra assemblé en technologie Package-on-Package	24	Contrat de collaboration R&D Valeo	Participant	Valeo
2014-17	Robustesse électronique	48	IRT Saint-Exupéry – 100 k€	Participant, co-encadrant de thèse	IRT Saint-Exupéry, LAAS-CNRS, IMS, Airbus, Continental Automotive, Nexio, Thalès Alinea Space
2016-18	MECA (MicroElectronics Cloud Alliance)	36	ERASMUS+ Knowledge Alliances for Higher Education – 126 k€	Participant	Technical University of Sofia, INSA Toulouse, Politecnico di Torino, Universidad Nacional de Educacion a Distancia, AMG Technology OOD, INES, eWorks GmbH, Universitatea Politehnica din Bucuresti, Open Universiteit Nederlan, Technische Universitaet Berlin, INOMA Renovables.

2017-20	FELINE (Fiabilité ÉLectronique INtégréE)	48	IRT Saint-Exupéry – 120 k€	Participant, co-encadrant de 2 thèses	IRT Saint-Exupéry, LAAS-CNRS, IMS, Airbus, Continental Automotive, Safran Tech, Liebherr-Aerospace, ACTIA Automotive
2019-	Laboratoire commun LICUR (Laboratoire de Recherche Conventionné sur L'Instrumentation et les Capteurs Ultra-Rapides)		CEA – 10 k€/an	Participant, co-encadrement de thèse	CEA Gramat, LAAS
2020-21	Nanoscan (Dimensionnement, optimisation et qualification CEM des architectures électroniques modulaires)	18	R&T CNES – 30 k€/an – 25 k€	Porteur	CNES
2021	Laboratoire commun SEMA (Systèmes Embarqués pour la Mobilité Autonome)		NXP Semiconductors – 10 k€/an	Responsable work package, encadrement de thèse	NXP Semiconductors, LAPLACE, LAAS
2022	Etat de l'art sur le vieillissement des protections CEM	6	EDF – 25 k€	Porteur	EDF