Curriculum Vitae – Alejandro Buren

1 Personal Information

Alejandro Buren
Limoges, France
@reveyrand

2 Professional Objective

Improve the efficiency of the microwave and RF designers and structures. I focus on nonlinear devices at circuits level (such as HEMTs transistors) and at system level (HPA, Switches). That purpose requires an original use of an advanced RF instrumentation associated to a strong knowledge in terms of measured devices modeling.

3 Skills

Operating systems : DOS, Windows, Unix and Linux.

Programming languages : Pascal, 80x86 Assembler, C, C++, TCL/TK, JAVA, PHP, mySQL.

Office softwares : Microsoft Office, Open Office, LaTeX, DocBook.

Scientific softwares Comsys, Maple, Matlab, Mathematica, Scilab, Keysight's VEE and ADS, NI LabVIEW.

Characterization tools : Spectrum analyzers, scopes, AWG, VNA, LSNA, probe stations, high impedance probes. I have developed calibration procedures and automated calibration and measurements processes.

System Level Modeling : Amplifiers, modulators and mixers with splines, neural networks or Volterra expansions. Bilateral Modeling by PhD model.

Circuit Level Modeling : Linear, nonlinear and electrothermal models of HEMTs.

Languages : French, English.

4 Certifications

National Instruments Certified LabVIEW Associate Developer (CLAD) *July 2014-July 2016*

5 Awards

Best Paper Award, European Microwave Week - Galium Arsenide Application Symposium (GAAS), 2002

T. Reveyrand, C. Maziere, J.M. Nébus, R. Quéré, A. Mallet, L. Lapierre, J. Sombrin, "A calibrated time domain envelope measurement system for the behavioral modeling of power amplifiers", European Microwave Week, GAAS 2002, pp. 237-240, Milano, September 2002

Best Student Paper Award, Journées Nationales Micro-ondes (JNM), 2007

O. Jardel, F. De Groote, T. Reveyrand, C. Charbonniaud, J.P. Teyssier, R. Quéré, D. Floriot, "Modélisation du drain-lag dans les modèles électriques grand-signaux de transistors HEMTs AlGaN/GaN", 15eme Journées Nationales Micro-ondes (JNM),3C1, Toulouse, Mai 2007.

Up to 130 other refrences are available here :
http://www.microwave.fr/publications.html

6 Professional Organizations

The Institute of Electrical and Electronics Engineers (IEEE)
Member of :

"Microwave Theory and Techniques" society	*2007-present*
"Instrumentation and Measurement" society	*2007-present*

MTT-11 "Microwave Measurements" technical committee *2009-present*

IEEE MTT-S Technical Program Review Committee (TPRC) for IMS *2013-present*

Judge for IEEE MTT-S Graduate Fellowships *2014-present*

Chair for IEEE Denver Section Jt. Chapter, AP03/MTT17 *2015-2016*

The European Microwave Association (EuMA) *2009-2015*

7 Employment History

Measurement Engineer (CNRS) XLIM *June 2016-Present*

Lecturer University of Colorado, Boulder *January 2016-May 2016*
ECEN 5014-003, "Microwave Measurements and Calibration Fundamentals"

Research Associate University of Colorado at Boulder *June 2013-May 2016*
Achievements :

LabVIEW software for a "Do-it-yourself" Large-Signal Network Analyzer (LSNA)

Time domain measurement setup in Scilab (VTD-SWAP)

Outphasing PA characterizations

Load-pull in time-domain

Measurement Engineer (CNRS) XLIM *December 2007-May 2013*
Achievements :

Korrigan European Project activities (RTP N°102.052 funded within the EUROPA framework in the CEPA2 priority area - ends early 2009) : GaN HEMTs circuits level modeling from european foundries (Thales / QinetiQ) for HPA, LNA and Switches

Time domain measurement setup (LSNA) development on Scilab-TCL/TK (GUI, calibration and measurement automation)

Development of HEMTs modeling tools (Scilab)

Contractual measurements such as load-pull, linearity, high impedance probe in both frequency (VNA) and time domain (LSNA)

Research Associate - Visiting Scholar University of Colorado at Boulder *February 2012-July 2012*
GaN HEMTs based rectifiers characterizations and analysis

Research Engineer (CNRS) XLIM *May 2005-November 2007*
Achievements :

Frequency domain load-pull measurement setup (VNA in receiver mode with pulse capabilities) developpemnt with Scilab (calibration procedures, measurement automation, data processing)

Large signal caracterization of transistor (mainly european GaN in the framework of Korrigan

Korrigan WP3.3 workpackage leader in Korrigan. Developpement of a internet database (Php / mySQL) to let partners share data and informations

GaN HEMTs "spice-like" nonlinear models

Research Engineer NMDG Engineering bvba *November 2004-February 2005*
Implementation of the High Impedance Probe module (calibration and measurements) in the commercial LSNA Software (based on Mathematica)

Postdoctoral scientist CNES (French Space Agency) *October 2003-September 2004*
Development of characterization tools interfaces within the free open-source scientific package Scilab

Postdoctoral scientist CNES (French Space Agency) *October 2002-September 2003*
Achievements :

Large Signal Network Analysis (LSNA) characterizations in time-domain

Development of a new LSNA module in order to investigate time domain waveforms at internal nodes of MMICs with high impedance probes (HIP) to validate circuits designs and to analyze nonlinear parametric stability

Large Signal Network Analysis (LSNA) characterizations in time-domain

Researcher IRCOM / University of Limoges *October 1998-September 2002*
Achievements :

Development of the RF time-domain envelope measurement setup (hardware and software)

Development of the calibration procedure of the time-domain envelope measurement setup

Power amplifiers characterizations : Load-pull, IM3, NPR

Behavioral modeling of nonlinear devices with memory effects for system level

Development of a dynamic complex gain model with neural networks

Lecturer University of Limoges *October 1998-September 2002*
RF devices, analog/digital communication systems, signal processing, propagation waves...

Postgraduate student IRCOM / University of Limoges *February 1998-July 1998*
Circuits level simulations of IM3 and NPR in order to optimize the trade-off between linearity and efficiency

8 Education

Ph.D in High Frequency Devices and Circuits - Electronic and Optoelectronic, April 2002
University of Limoges (France)