

Armando ABRANTES

PERSONAL DATA

PLACE AND DATE OF BIRTH: Sousa, Brazil | 21 September 1993
PROFESSIONAL ADDRESS: Centro de Tecnologia, bloco I, sala I - 154 21949-900 Rio de Janeiro Brasil
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RESEARCH INTERESTS

Grid Integration of Renewable Energy Sources, Parallel and Series Operation of Distributed Converters, AC and DC Micro-grids Modelling and Control, Energy Storage, Non-Linear Synchronization Phenomena of Coupled Oscillators, Low-Inertia Power Systems Stability Analysis, Non-Linear Dynamical Systems, Emergent Phenomena in Complex Systems, Social Technology.

EDUCATION

CURRENT MAR. 2019	Doctor of Sciences in ELECTRICAL ENGINEERING Federal University of Rio de Janeiro (UFRJ) , Rio de Janeiro, Brazil Research Theme: Integration of Renewable Energies Sources in the Context of Distributed Generation: The Problem of Parallelism of Inverters Sharing a Common AC Bus Advisor: Profs. L. G. B. ROLIM and R. F. da S. DIAS
FEB. 2019 MAR. 2017	Master of Sciences in ELECTRICAL ENGINEERING Federal University of Rio de Janeiro (UFRJ) , Rio de Janeiro, Brazil Thesis: "Digital One-Cycle Control Technique with Grid Voltage Measurement Applied to Three-Phase Power Factor Corrected Rectifiers and Active Power Filters". Course CGPA: 2.46/3.0 Advisors: Profs. L. G. B. ROLIM and R. F. da S. DIAS
JUN. 2014 JUL. 2013	Exchange Year in ELECTRICAL ENGINEERING Norwegian University of Science and Technology (NTNU) , Trondheim, Norway Study Program in the Fields of Marine and Offshore Power Systems, High Voltage Equipment, Electric Drives and Renewable Energy
SEP. 2012 MAR. 2012	Exchange Semester in ELECTRICAL ENGINEERING Federal University of Rio de Janeiro (UFRJ) , Rio de Janeiro, Brazil Study Program in Economics, Analog Control, Economics and Applications with Microprocessors-Based Devices. Advisor: Prof. L. G. B. ROLIM
MAY 2017 MAR. 2010	Bachelor Degree in ELECTRICAL ENGINEERING Federal University of Campina Grande (UFCG) , Campina Grande, Brazil Final Project: "Implementation of an Electric Drive System with Permanent Magnet Synchronous Motor with Speed and Position Estimation from Digital Hall Effect Sensors". Course CGPA: 7.53/10.0 Advisor: Prof. A. C. OLIVEIRA

LANGUAGES

PORTUGUESE:	Mothertongue
ENGLISH:	Fluent
SPANISH:	Intermediate Knowledge
FRENCH:	Elementary

RESEARCH EXPERIENCE

Current OCT 2017	<p>Researcher at ALTERNATIVE ENERGY SOURCES LABORATORY - COPPE/UFRJ, Rio de Janeiro, Brazil</p> <p><i>Application of Power Electronics to Electric Grid</i></p> <p>Research on Microgrids focused on applications of nonlinear and non-conventional control techniques to renewable energy sources integration, three-phase PFC Rectifier, Active Filter and Microgrid Voltage Support. The systems modelling, control systems design, real implementation on a DSP from Texas Instruments and recently from NXP Semiconductors. Additional circuits PCB design are done with the use of tools such as Matlab/Simulink, PSCAD/EMTDC, PSIM, Code Composer Studio and Altium Designer.</p> <p>Advisors: Profs. R. F. da S. DIAS and L. G. B. ROLIM</p>
Feb. 2017 DEC. 2016	<p>Intern at ALTERNATIVE ENERGY SOURCES LABORATORY - COPPE/UFRJ, Rio de Janeiro, Brazil</p> <p><i>Electric Drives and Microcontrollers</i></p> <p>Development of an Electric Drive System with Permanent Magnet Synchronous Motor (PMSM) with Speed and Position Estimation from Digital Hall Effect Sensors. The systems modelling, control systems design, real implementation on a DSP from Texas Instruments were done with the use of tools such as Matlab/Simulink, PSIM and Code Composer Studio.</p> <p>Supervisor: Prof. L. G. B. ROLIM</p>
Aug. 2016 SEPT. 2014 & Jun. 2013 Nov. 2012	<p>Researcher at LABORATORY OF INDUSTRIAL ELECTRONICS AND MOTOR DRIVE - UFCG, Campina Grande, Brazil</p> <p><i>Active Filters and Electric Drives</i></p> <p>Researches on Multilevel Converters applied to Active Current Filter and Electric Drives with Open-End Multiphase Induction and Permanent Magnet Synchronous Machines. The systems modelling, control systems design and simulations were done with the use of tools such as Matlab/Simulink and PSIM.</p> <p>Advisor: Prof. C. B. JACOBINA</p>
Jan. 2012 MAR. 2011	<p>Researcher at INSTRUMENTATION AND CONTROL LABORATORY - UFCG, Campina Grande, Brazil</p> <p><i>Supervisory System</i></p> <p>Development of a Monitoring System using Microsoft Silverlight 4 with image capture and making it available on web for visualization aiming industrial applications.</p> <p>Advisor: Prof. P. R. BARROS</p>

PUBLICATIONS

2020	S. L. S. Lima Barcelos, R. F. da S. Dias, A. J. G. Abrantes-Ferreira, A. G. P. Alves, E. W. Watanabe, "Dynamic Direct Voltage Controller (D2VC) for grids with intermittent sources," <i>Electric Power Systems Research</i> , v. 182, p. 106225, 2020. Link
2019	A. J. G. Abrantes-Ferreira, L. do N. Gomes, R. F. da S. Dias and L. G. B. Rolim, "Stability Analysis of Triangular Carrier One-Cycle Control based on Poincaré Maps". In: <i>IEEE 15th Brazilian Power Electronics Conference and 5th IEEE Southern Power Electronics Conference (COBEP/SPEC)</i> , Santos, Brazil, December, 2019. Link
2016	A. J. G. A. Ferreira and C. B. Jacobina, "Static Conversion System with Open-end Stator Windings Six-Phase Machine". In: <i>XIII Scientific Initiation Congress of Federal University of Campina Grande</i> , Campina Grande, November, 2016. Link
2015	A. J. G. A. Ferreira and C. B. Jacobina, "Shunt Active Filter for Three-Phase Electric System with Interconnected Static Converters". In: <i>XII Scientific Initiation Congress of Federal University of Campina Grande</i> , Campina Grande, November, 2015. Link
2013	A. J. G. A. Ferreira and C. B. Jacobina, "Conversion System Based on Association of Static Converters with Sixteen Switches, Two Inductors and Four DC Links". In: <i>X Scientific Initiation Congress of Federal University of Campina Grande</i> , Campina Grande, November, 2013. Link

TECHNICAL SKILLS

TOOLS:	Matlab/Simulink, Python, PSIM, PSCAD/EMTDC, Altium Designer, Code Composer Studio
LANGUAGES:	C/C++, C, Python, \LaTeX
HARDWARE:	DSPs: Texas Instruments TMS320F28377S and TMS320F28379D, NXP MK22FN512
CERTIFICATION:	Typhoon HIL Specialist Certification

VOLUNTEER WORK

<i>Current</i> APR. 2019	Teacher at PREPARANEM, Rio de Janeiro, Brazil Support to students on Physics Subject of High School Level aiming to prepare them for the Brazilian National University Entrance Examination (ENEM).
<i>Current</i> APR. 2016	Bike Teacher at BIKE ANJO NGO - Campina Grande and Rio de Janeiro, Brazil I teach people to ride bikes and to get to know the cities from a (moving) point of view on a bike.

INTERESTS AND ACTIVITIES

Technology, Mathematics, Programming, Energy, Volunteer Work, Walking, Travelling, Percussion, Musical Improvisation, Learning Languages, Cooking, Eating.

REFERENCES

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