

# Diogo Aguiam

Electronics Engineer, PhD

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Hardware and signal processing engineer with a passion for building complex new systems from scratch

## EXPERIENCE

Staff Researcher

International Iberian Nanotechnology Laboratory

Since July 2018 Braga, Portugal

- Electronic instrumentation and data processing

Microwave Diagnostics Developer - Invited Researcher

Max-Planck-Institut für Plasmaphysik

November 2015 - May 2018 Garching, Germany

- Installation and commissioning of microwave reflectometry diagnostics for Nuclear Fusion research
- Development of density profile reconstruction codes for distributed computing cluster
- Working in a nuclear fusion research facility including in-vessel access

Microwave Engineer - Reseacher

Instituto de Plasmas e Fusão Nuclear

February 2013 - June 2018 Lisbon, Portugal

- Design and assembly of RF electronics systems
- Testing and validation of new microwave diagnostics

LabVIEW Developer

Department of Physics, Instituto Superior Técnico

February 2012 - July 2012 Oeiras, Portugal

- Development of LabVIEW interfaces for physics laboratories

## TRAINING

Open Leadership Training

Mozilla

June 2018

- OpenReflectometry: open source Python library for reflectometry data

Software Carpentry Instructor

Software Carpentry

February 2018

- Teaching basic lab skills for research computing

Nanotechnologies - Athens Programme

École Nationale Supérieure de Techniques Avancées

November 2011 Paris, France

- Fundamentals of nano-structures, nanophotonics, spintronics and microfabrication techniques

## TECHNICAL SKILLS

C/C++

Python

PCB Design

Signal Processing

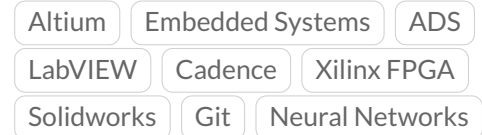
Software Engineering

MATLAB

RF



Experience with:



## LANGUAGES

Portuguese

English (C2)

French (B1)

German (B1)



## EDUCATION

Double Ph.D. in Physics Engineering

University of Ghent & Universidade de Lisboa

2014 - 2018

Thesis: Implementation of a X-mode multichannel edge density profile reflectometer for the new ICRH antenna on ASDEX Upgrade  
Pass with distinction

M.Sc. in Electronics Engineering

Instituto Superior Técnico, U. Lisboa

2011 - 2013

Thesis: Heterodyning Non Destructive Testing Electronic System Based on Eddy Currents

B.Sc. in Electronics Engineering

Instituto Superior Técnico, U. Lisboa

2008 - 2011

Best in class scholarships for three years

# PUBLICATIONS

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## Journal Articles

- Aguiam, Diogo E. et al. (2018). “Estimation of X-mode reflectometry first fringe frequency using neural networks”. In: *IEEE Transactions on Plasma Science*.
- Aguiam, DE et al. (2017). “X-mode raw data analysis of the new AUG ICRF antenna edge density profile reflectometer”. In: *Fusion Engineering and Design*.
- Aguiam, D et al. (2017). “Overview of ASDEX Upgrade results”. In: *NUCLEAR FUSION* 57.10.
- Fünfgelder, H et al. (2017). “A double success story: The international cooperation to build the new ICRF antennas on ASDEX Upgrade and the results obtained”. In: *Fusion Engineering and Design*.
- Meyer, H et al. (2017). “Overview of progress in European medium sized tokamaks towards an integrated plasma-edge/wall solution”. In: *Nuclear Fusion* 57.10, pp. 1–15.
- Zhang, W, W Tierens, JM Noterdaeme, et al. (2017). “Radio frequency heating induced edge plasma convection: self-consistent simulations and experiments on ASDEX Upgrade”. In: *Nuclear Fusion* 57.11.
- Zhang, Wei et al. (2017). “Effects of outer top gas injection on ICRF coupling in ASDEX Upgrade: towards modelling of ITER gas injection”. In: *Plasma Physics and Controlled Fusion* 59.7, p. 075004.
- Aguiam, DE et al. (2016). “Implementation of the new multichannel X-mode edge density profile reflectometer for the ICRF antenna on ASDEX Upgrade”. In: *Review of Scientific Instruments* 87.11, 11E722.
- Bobkov, V, D Aguiam, M Baruzzo, et al. (2016). “Progress in reducing ICRF-specific impurity release in ASDEX upgrade and JET”. in: *Nuclear Materials and Energy*.
- Bobkov, V et al. (2016b). “Making ICRF power compatible with a high-Z wall in the ASDEX Upgrade”. In: *Plasma Physics and Controlled Fusion* 59.1, p. 014022.
- Aguiam, Diogo E et al. (2015). “Heterodyning based portable instrument for eddy currents non-destructive testing”. In: *Measurement* 73, pp. 146–157.
- Silva, F da et al. (2015). “REFMULF: 2D Fullwave FDTD Full Polarization Maxwell Code”. In:

## Conference Proceedings

- Zhang, W, V Bobkov, et al. (2017). “Recent progress on improving ICRF coupling and reducing rf-specific impurities in ASDEX Upgrade”. In: *22nd RF Topical Conference on Radiofrequency Power in Plasmas (RFPPC 2017)*.
- Zhang, W, D Coster, et al. (2017). “Plasma edge modelling with ICRF coupling”. In: *22nd RF Topical Conference on Radiofrequency Power in Plasmas (RFPPC 2017)*.
- Bobkov, V et al. (2016a). “ICRF heating in ASDEX Upgrade with W wall”. In: *International Conference and School on Plasma Physics and Controlled Fusion*.
- Noterdaeme, Jean-Marie et al. (2016). “Ion Cyclotron Range of Frequency Power Challenges and Solutions”. In: *26th IAEA Fusion Energy Conference*.
- Zhang, W, W Tierens, D Aguiam, et al. (2016). “Radio frequency heating induced edge plasma convection”. In: *DPG-Frühjahrstagung der Sektion Materie und Kosmos (SMuK)*. DPG.
- Aguiam, Diogo Elói, Bernardo Brotas de Carvalho, and Mário Lino da Silva (2015). “Feasibility Study of a Control System based on PLC and EPICS for the ESTHER Combustion Gas Injection”. In: *Experiment@ International Conference (exp. at'15), 2015 3rd*. IEEE, pp. 22–26.
- Aguiam, Diogo E et al. (2014). “Portable instrument for eddy currents Non-Destructive Testing based on heterodyning techniques”. In: *Instrumentation and Measurement Technology Conference (I2MTC) Proceedings, 2014 IEEE International*. IEEE, pp. 1368–1372.