GERMÁN PÉREZ PICHEL

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NATIONALITY: Spain
PHONE: +33 648 849 748
DATE OF BIRTH: 6th / May / 1981, La Coruña, Spain
LICENSE NUMBER 4517 / 3747 of the Engineering Professional Association ICAI (2005)

ACADEMIC EDUCATION

2011 — **PhD in INDUSTRIAL / MECHANICAL ENGINEERING**
ICAI School of Engineering. Comillas Pontifical University, Madrid
 - **Thesis** (maximum grade): **"**Power conversion system analyses for Generation IV nuclear reactors refrigerated by liquid metals"

2007 — **DIPLOMA ON ADVANCED STUDIES: PLASMAS AND NUCLEAR FUSION**
Complutense University - Carlos III University - CIEMAT, Madrid
 - **Research Project** (maximum grade): "Integration of the reflectometry diagnostic for the plasma position control in ITER "

2005 — **MSc in INDUSTRIAL ENGINEERING**
ICAI School of Engineering. Comillas Pontifical University, Madrid
Specialization in Mechanical-Energy Engineering
 - **Research Project** (maximum grade): "High torque generator design with excitement by permanent magnets for wind turbines"

COMPLEMENTARY EDUCATION

2013 — **50th Culham Plasma Physics Summer School;** Culham Center Fusion Energy, Oxford, UK

2009 — **23rd Symposium on Fusion Engineering;** Fusion engineering technologies, San Diego, USA

2008 — **ANSYS Courses: Structural, thermal, dynamic, electromagnetic and CFX;** Ingeciber, Madrid

2007 — **11th Course: Energy Conversion Systems in Tokamak Reactors;** International School of Fusion Reactor Technology, "Ettore Majorana" Foundation and Centre, Erice, Italy

2007 — **Theory and Applied Course: The Finite Elements Method;** UNED, Madrid

2006 — **Inside Washington Summer Course: Technology, Policy and Sustainable Development;** Georgetown University, Washington DC, USA – Comillas Pontifical University, Madrid

HONORS / AWARDS

2012 — Principality of Monaco / ITER Postdoctoral Fellowship
2011 — Maximum grade mention in Doctorate Thesis
2006 — Best MSc Final Project in Industrial Engineering: ICAI National Engineering Association Award
2005 — Maximum grade mention in MSc Final Project

SPECIALITIES

- Nuclear technologies: Fusion and Fission
- Thermal-hydraulic engineering
- Analysis of power cycles and cooling systems
- Thermal-structural-electromagnetic analysis using the finite element method

PRESENT POST AND PREVIOUS POSITIONS HELD

September 2012 – Today
ITER Organization - Blanket Section

POSITION	Principality of Monaco / ITER Postdoctoral Researcher
ACTIVITY	Hydraulic, thermal and mechanical engineering support for the ITER Blanket system
PROJECTS	- Mass flow rate redistribution analysis for blanket modules
	- Bond / defects acceptance criteria definition for the ITER First Wall

January 2011 – August 2012
GHESA- Engineering and Technology / EMPRESARIOS AGRUPADOS

POSITION	Mechanical Engineer at the System Development Section (Mechanical Department)
ACTIVITY	- Mechanical engineering
	- Thermal and cooling systems development (design and calculation)
	- Power cycle analysis for Gen. IV Nuclear plants: sodium, lead and helium core coolants
	- Project management for IFMIF cooling systems (radiofrequency and beam dump)
PROJECTS	- **Project manager:**
	- Analysis and Design of the Cooling System of the IFMIF-EVEDA Radiofrequency System
	- Detailed Design of the Purification System of the IFMIF-EVEDA Beam Dump System
	- **Design and calculation main responsible:**
	- Advanced power cycles for Gen IV nuclear reactors: ESFR (sodium fast reactor), LEADER-ELSY (lead fast reactor) and GoFast (gas fast reactor)
	- Systems for coupling a nuclear reactor with an advance electrolyser: ADEL project
	- Oil supply system for the E-ELT (European – Extra Large Telescope)
	- Thermal balance for new combined cycles

September 2009 – January 2011
ICAI School of Engineering - COMILLAS PONTIFICAL UNIVERSITY

POSITION	Associated Teacher
ACTIVITY	- Teaching (see "Teaching Experience")
	- Research on the Thermodynamics Area
	- Support to the Rafael Mariño Chair on New Energy Technologies
PROJECTS	- PhD Thesis: Power conversion system analyses for Generation IV nuclear reactors refrigerated by liquid metals

October 2006 – September 2009
CIEMAT - Magnetic Fusion Confinement National Laboratory - Engineering Unit

POSITION	Mechanical Engineer of the LNF
ACTIVITY	Mechanical engineering and TJ-II operation
PROJECTS	- Design, calculation and integration of the reflectometry diagnostic for ITER
	- Design and calculation of the JT-60 SA support and cryostat
	- Stellarator Heliac Flexible TJ-II

February 2006 – July 2006
EMPRESARIOS AGRUPADOS - Engineering and Consulting

POSITION	Fellow engineer
ACTIVITY	Electrical engineering
PROJECTS	Combined Cycles Power Stations; Advanced Nuclear Power Station ESBWR

TEACHING EXPERIENCE

October 2007 – July 2012
ICAI School of Engineering - COMILLAS PONTIFICAL UNIVERSITY

DEPARTMENT	Mechanical Engineering
ACTIVITY	Associated and collaborator teacher
SUBJETCS	**Thermodynamics (Theory lessons)** 2nd Industrial Engineering Years: 2007-2008; 2008-2009; 2009-2010
	Thermodynamics (Theory lessons) 2nd Technical Industrial Engineering Years: 2007-2008; 2009-2010
	Cogeneration (Theory lessons) 4th Business and Industrial Engineering Years: 2009-2010; 2010-2011; 2011-2012
	Fluid mechanics Engineering (Laboratory lessons) 2nd Technical Industrial Engineering Year: 2010-2011
	Thermal and Fluids Engineering (Laboratory lessons) 4th Industrial Engineering Years: 2009-2010; 2010-2011
	Thermal and Hydraulics Turbomachines (Laboratory lessons) 4th Industrial Engineering Year: 2009-2010

LANGUAGES

English	Fluent
French	Intermediate
Spanish	Mother tongue

COMPUTER SKILLS

Simulation and Calculation	***Engineering/scientific/simulation solver:*** Matlab; EES (Engineering Equation Solver); EcosimPro
	Finite Element Analyses: ANSYS (Classic and Workbench: structural, thermal, dynamic and electromagnetic)
	Fluid Dynamic Analyses (CFD): CFX; Thermoflow
	Hydraulic Analyses: EPANET
Design	CATIA; Enovia / SmarTeam; Autocad; Microsoft Visio
Programming languages	C ++; Matlab

PARTICIPATIONS IN INTERNATIONAL CONFERENCES

AS MAIN AUTHOR / PRESENTER

2013	- "Optimised mass flow rate distribution analysis for cooling the ITER Blanket System" (First Author – poster presentation) 11th *International Symposium on Fusion Nuclear Technology (Barcelona, Spain)*
2013	- "ITER Blanket System and overview on FW defects acceptance criteria research as an example of R&D activities" (First Author – poster presentation) 50th *Culham Plasma Physics Summer School (Oxford, UK)*
2011	- "Comparative analysis for different optimized power conversion cycles for Gen. IV Fast Reactors" (First Author – oral presentation) 37th *Annual Spanish Nuclear Society Symposium (Burgos, Spain)*
2009	- "Thermal-Mechanical-Electromagnetic analysis of the ITER Plasma-Position Reflectometry Antennas with ANSYS" (Only author - oral presentation) 1st *Congress of CAE and BIM users (Madrid, Spain)*
2008	- "Thermal and mechanical analysis of the ITER Plasma-Position Reflectometry Antennas" (First author - poster presentation) 25th *Symposium on Fusion Technology* (Rostock, Germany)

AS CONTRIBUTOR

2010	- "A prospective study of power cycles based on the expected Sodium Fast Reactor parameters" (Contribution / Main responsible of the presented work) *International Congress on Advances in Nuclear Power Plants - ICAPP '10 (San Diego, USA)*
2010	- "JT60-SA Cryostat design and assembly" (Contribution) 26th *Symposium on Fusion Technology (Oporto, Portugal)*
2010	- "Structural analysis of the JT-60-SA Cryostat Base" (Contribution) 26th *Symposium on Fusion Technology (Oporto, Portugal)*
2009	- "Nuclear technology aspects of ITER In-Vessel Diagnostics" (Contribution) 14th *International Conference on Fusion Reactor Materials (Sapporo, Japan)*

LIST OF PUBLICATIONS

ARTICLES	
2013	- "Optimised mass flow rate distribution analysis for cooling the ITER Blanket System" (First Author) *Fusion Engineering and Design*
2012	- "Thermal analysis of Supercritical CO2 power cycles: assessment of their suitability to the forthcoming Sodium Fast Reactors" (First author) *Nuclear Engineering and Design*
2012	- "Cooling system for the IFMIF-EVEDA Radiofrequency System" (Only author) *Nuclear España (Spanish Nuclear Society Journal)*
2011	- "Nuclear technology aspects of ITER Vessel-Mounted Diagnostics" (Contribution) *Journal of Nuclear Materials*
2011	- "Structural analysis of the JT-60-SA Cryostat Base" (Contribution) *Fusion Engineering and Design*
2011	- "Potential application of Rankine and He/Brayton cycles to Sodium Fast Reactors" (First author) *Nuclear Engineering and Design*
2009	- "Thermal and mechanical analysis of the ITER Plasma-Position Reflectometry Antennas" (First author) *Fusion Engineering and Design*

BOOKS	
2010	- "Energía Geotérmica: Análisis y Prospectiva" (Responsible of all transcriptions of the VII Annual Conference 2010, Rafael Mariño Chair on New Energy Technologies) *Edition: ICAI National Engineering Association and Comillas Pontifical University*
2009	- "El Ingeniero del ICAI y el Desarrollo Sostenible" (Collaborator author on the chapter 12: "Recursos y tecnologías energéticas con energía nuclear") *Edition: ICAI National Engineering Association and Comillas Pontifical University*