

**PEDRO MANUEL BRITO DA SILVA GIRÃO**

**CURRICULUM VITAE**

**May 2026**

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## **1. IDENTIFICATION**

Pedro Manuel Brito da Silva Girão, Portuguese, born in Lisbon, Portugal, on the 27th February, 1952.

## **2. ACADEMIC DEGREES AND TITLES**

**2.1.** Faculty of Electrical Engineering, Technical University “Gheorghe Asachi”, Iasi, Romania: Doctor Honoris Causa, April 2009.

**2.2.** Instituto Superior Técnico (IST): Agregação (Habilitation) in Electrical and Computer Engineering, December 1995.

**2.3.** IST: Ph.D. in Electrical and Computer Engineering, 1988: approved by unanimous decision with Distinction cum Laude.

**2.4.** IST: Licenciatura (5 years’ degree) in Electrical Engineering, Telecommunications and Electronics, 1974/75, final classification 17/20 (top 2% of the class).

## **3. MILITARY SERVICE**

Mandatory military service, from September 1977 to December 1978, in Army’s Transmissions Branch.

## **4. TEACHING ACTIVITY**

### **4.1 University**

#### **4.1.1 Professional Progression at IST**

- Full Professor, since October 2007;
- Associate Professor, from May 1993 to October 2007;
- Assistant Professor, from May 1988 to May 1993;
- Assistant, from April 1975 to May 1988;
- Monitor, from December 1974 to March 1975.

#### **4.1.2 Lectured Courses Licenciatura – 5 years’ degree - in Electrical/Electrical and Computer Engineering, IST**

- Sensors and Actuators, from 2002/03 to 2006/07;
- Instrumentation and Measurements, 3rd year, from 1991/92 to 2006/07;

- Electrical Measurements, 3<sup>rd</sup> year (2<sup>nd</sup> Semester) from 1985/86 to 1990/91;
- Electrical Measurements II, 4<sup>th</sup> year (2<sup>nd</sup> Semester), in 1976/77 and from 1978/79 to 1980/81;
- Electrical Measurements I, 4<sup>th</sup> year (1<sup>st</sup> Semester), in 1976/77 and from 1978/79 to 1980/81;
- Theoretical Electrotechnics II, 3<sup>rd</sup> year (1<sup>st</sup> Semester), in 1987/88 and 1988/89;
- Theoretical Electrotechnics I, 3<sup>rd</sup> year (1<sup>st</sup> Semester), in 1975/76, 1987/88 and 1988/89;
- Electronics II, 3<sup>rd</sup> year (2<sup>nd</sup> Semester), in 1974/75, 1975/76 and 1978/79;
- Electronics I, 3<sup>rd</sup> year (1<sup>st</sup> Semester), in 1974/75 and 1975/76.

**4.1.3 Lectured Courses Licenciatura – 5 years’ degree - in Aerospace Engineering, IST**

Electronic Instrumentation, 5<sup>th</sup> year, in 1996/97.

**4.1.4 Lectured Courses Licenciatura – 5 years’ degree - in Biomedical Engineering, IST**

Instrumentation and Signal Acquisition, 4<sup>th</sup> year, in 2004/05 and 2005/06.

**4.1.5 Lectured Courses Licenciatura – 5 years’ degree - in Naval Military Sciences, Naval Engineering, Naval School**

Technology and Electrical Measurements, 3<sup>rd</sup> year (2<sup>nd</sup> Semester), from 1993/94 to 2014/15.

**4.1.6 Lectured Courses BSc. in Electronics Engineering, IST**

Introduction to Electronics Engineering, 1<sup>st</sup> year, 2018/19, 2019/20, 2020/21;

Soft Skills I, 2<sup>nd</sup> year, 2017/18;

Oral and Written Communication, 2<sup>nd</sup> year, 2013/14 and 2014/15.

**4.1.7 Lectured Courses MSc. in Electrical/Electrical and Computer Engineering, IST**

- Sensors and Actuators, from 2002/03 to 2005/06;
- PC-based Instrumentation, in 1990/91, 1991/92 and 1993/94;
- Automated Measuring Systems, in 1989/90;

- Measuring Transducers, in 1995/96, 1988/89, 1990/91 and 1996/97.

#### **4.1.8 Lectured Courses MSc. in Electronics Engineering, IST**

- MEE Soft Skills I, 1<sup>st</sup> year, 2018/19, 2019/20, 2020/21;
- Soft Skills II, 1<sup>st</sup> year, 2013/14, 2014/15 and 2017/18;
- Smart Sensors and Actuators, 1<sup>st</sup> year, 2006/07.

#### **4.1.9 Lectured Courses Integrated MSc. – 5 years' degree - in Electrical and Computer Engineering, IST**

- Instrumentation and Measurements, 3rd year, 2013/14 to 2020/21;
- Sensors and Actuators, 4th year, in 2006/07.

#### **4.1.10 Lectured Courses BSc. program 6B07532 - "Standardization and Certification", L.N. Gumilyov Eurasian National University, Nur-Sultan, Kazakhstan**

- Lean Production, 2020/21;
- Quality Control of Goods and Services, 2020/21.

#### **4.1.11 Lectured Courses BSc. in Electrical and Computer Engineering, IST**

- Instrumentation and Measurements, 2021/2022.

#### **4.1.12 Teaching responsibilities**

- Lean Production, 2020/21;
- Quality Control of Goods and Services, 2020/21;
- Introduction to Electronics Engineering, 2018/19, 2019/20, 2020/21, 2021/22;
- MEE Soft Skills I, 2018/19, 2019/20, 2020/21, 2021/22;
- Soft Skills I, 2017/18;
- Oral and Written Communication, 2013/14 and 2014/15;
- Soft Skills II, 2013/14, 2014/15 and 2017/18;
- Electrical Measurements I and II in 1979/80 and 1980/81;
- Electrical Measurements, from 1985/86 to 1990/91;
- Instrumentation and Measurements, in 1991/92, 1992/93, from 1997/98 to 2000/01 and in 2002/03;
- Electronic Instrumentation, in 1996/97 and 1997/98;
- Sensors and Actuators, from 2002/03 to 2005/2006;
- Smart Sensors and Actuators, in 2006/07;
- Technology and Electrical Measurements, since 1993/94;

- Electronics for Instrumentation, Licenciatura in Chemical Engineering - Processes and Industry and Applied Chemistry -;
- Instrumentation and Automated Measuring Systems, from 1988/89 to 1991/92;
- Measuring Systems, in 1992/93 and 1993/94.

In the M.Sc. Program in Electrical and Computer Engineering - Instrumentation and Electrical Measurements -, we proposed and were in charge of:

- Radiofrequency Measuring Systems, 1st Semester, in 2003/04.
- PC-based Instrumentation, 2nd Semester, from 1990/91 to 1995/96;
- Automated Measuring Systems, 2nd Semester, from 1987/88 to 1989/90;
- Instrumentation for Electrical Measurements, 1st Semester, from 1987/88 to 1990/91;
- Metrology, 1st Semester, from 1987/88 to 1990/91;

#### **4.1.13 Final Year Projects Supervision**

"Sistema Automático para Determinar a Característica Magnética e Medir Perdas em Materiais Ferromagnéticos Macios Utilizando o Aparelho de Epstein", LEEC, IST/UTL, 1993/94, Gilberto António Lopes;

"Implementação de um sistema automático de medida da condutividade de materiais semicondutores amorfos", LEEC, IST/UTL, 1993/94, J. A. Ferreira Lopes and J. O. Machado Vitorino;

"Extracção de formas de onda imersas em ruído", LEEC, IST/UTL, 1994/95, Federico Montesello, University of Padua, Italy;

"Determinação, em tempo real, do binário de uma máquina assíncrona pela medição digital dos valores instantâneos das tensões e correntes aos terminais", LEEC, IST/UTL, 1996/97, Adérito Machaieie, Fernando Mendes and Nuno Caldeira;

"Sistema de telemetria para meio atmosférico e meio aquoso", LEEC, IST/UTL, 1998/99, Rodrigo Parra and José Barreto.

#### **4.1.14 Post-Graduation Supervision**

##### **Post-Doc**

Octavian Adrian Postolache, June 2000 to May 2005, PRAXIS XXI post-doc grant;

Octavian Adrian Postolache, from February to September 1999.

##### **Ph.D.**

Paulo Miguel dos Santos Ferreira, Ph.D. in ECE, IST/UTL, “Voxel-based Dosimetry Using Multimodal Images for Patient-specific Liver Radioembolization with Yttrium-90 Charged Glass Microspheres”, concluded in April 2019;

Eduardo Correia Pinheiro, Ph.D. in ECE, IST/UTL, “Unobstructive Vital Signs Monitoring of Wheelchair Users”, concluded in 2013;

Vítor Manuel Rodrigues Viegas, Ph.D. in ECE, IST/UTL, “Plataformas de Interoperabilidade para Sistemas de Instrumentação, Medida e Controlo”, concluded in January 2012;

Ricardo Filipe de Queirós, Ph.D. in ECE, IST/UTL, “Medidas de Alta Resolução Utilizando Ultrasons”, concluded in 2008;

José Luís Gonçalves Correia da Mata, Ph.D. in Physics Engineering, IST/UTL, “Modelos e Técnicas de Instrumentação para Medidas Simultâneas de Densidade e Viscosidade de Líquidos”, concluded in 2004;

José Miguel Costa Dias Pereira, Ph.D. in ECE, IST/UTL, “Técnicas para Aumento de Desempenho em Sistemas de Digitalização de Sinais”, concluded in December 1999;

Helena Maria dos Santos Geirinhas Ramos, Ph.D. in ECE, IST/UTL, “Modelização do Comportamento de Materiais Ferromagnéticos Macios Sujeitos a Campos Magnéticos de Direcção Variável”, concluded in January 1995.

##### **M.Sc.**

Pedro Daniel Pinheiro da Silva, M.Sc. in ECE, IST/UL, “smartHealthCareMobunit - Unidade móvel baseada na utilização de plataformas “smart phone” para

monitorização e gestão de valores biomédicos e da qualidade do ar em ambientes inteligentes, to be concluded;

Teresa Afonso Vilar de Castro Paredes, M.Sc. in ECE, IST/UL, “Gait MR: Gait Rehabilitation Monitor and Cardiac Assessment”, concluded in November 2020;

Cláudia Alexandra de Sousa Furtado, M.Sc. in EE, IST/UL, “IIoT-based Inventory Management”, concluded in June 2019:

Francisco Cary, M.Sc. in ECE, IST/UL, “EHR & Kinect for Physiotherapy”, concluded in November 2014;

Mário Sérgio Barata Cunha Ribeiro, M.Sc. in ECE, IST/UL, “Monitoring with Application in Human Machine Interfacing”, concluded in May 2013;

João Miguel Correia Freire, M.Sc. in ECE, IST/UTL, “Smart Sensors for Ubiquitous Health Monitoring of Wheelchair Users”, concluded in December 2012;

João Oliveira do Rosário, M.Sc. in EE, IST/UTL, “Automation of a SMD Component Placement Machine”, concluded in November 2009;

Tiago Belo Antunes, M.Sc. in ECE, IST/UTL, “Utilização de Fibras Ópticas para Medida de Deformação em Estruturas”, concluded in May 2008;

Paulo Maia Santos, M.Sc. in ECE, IST/UTL, “Sistema Telemétrico para Monitorização da Qualidade da Água”, concluded in July 2000;

José Miguel Costa Dias Pereira, M.Sc. in ECE, IST/UTL, “Identificação de Componentes e Sistemas Passivos em Radiofrequência”, concluded in February 1995.

### **Internships**

Octavian Adrian Postolache, PhD. preparation, from March to July 1997;

José Carlos Neves, Departamento de Engenharia Electrotécnica da Universidade Agostinho Neto, Luanda, Angola, 1990.

#### 4.1.15 Course Evaluation

BSc in Telecommunications and Informatics Engineering, ISCTE - Instituto Universitário de Lisboa (ISCTE-IUL), EUR-ACE (EUROpean ACcredited Engineer) Label, president of the evaluation commission, 2023;

MSc in Telecommunications and Informatics Engineering, ISCTE - Instituto Universitário de Lisboa (ISCTE-IUL), EUR-ACE (EUROpean ACcredited Engineer) Label, president of the evaluation commission, 2023;

BSc in Electrical Engineering - Electrical Power Systems, Instituto Superior de Engenharia do Porto (ISEP), EUR-ACE (EUROpean ACcredited Engineer) Label, president of the evaluation commission, 2023;

BSc in Electrical Engineering, Instituto Superior de Engenharia do Porto (ISEP), EUR-ACE (EUROpean ACcredited Engineer) Label, president of the evaluation commission, 2022;

BSc in Electrical and Computer Engineering, Instituto Politécnico de Leiria, EUR-ACE (EUROpean ACcredited Engineer) Label evaluation commission member, 2022;

MSc in Electrical Engineering, Instituto Politécnico de Leiria, EUR-ACE (EUROpean ACcredited Engineer) Label evaluation commission member, 2021;

BSc in Electrical and Computer Engineering, Instituto Politécnico de Leiria, EUR-ACE (EUROpean ACcredited Engineer) Label evaluation commission member, 2018;

MSc in Electrical Engineering, Instituto Politécnico de Leiria, EUR-ACE (EUROpean ACcredited Engineer) Label evaluation commission member, 2018;

Integrated Master in Electrical and Computer Engineering, Universidade de Coimbra, EUR-ACE (EUROpean ACcredited Engineer) Label evaluation commission member, 2017;

MSc in Electrical Engineering, Instituto Superior de Engenharia do Porto (ISEP),

EUR-ACE (EUROpean ACcredited Engineer) Label evaluation commission member, 2017;

Integrated Master in Electronics and Telecommunications Engineering, Universidade de Aveiro, EUR-ACE (EUROpean ACcredited Engineer) Label, president of the evaluation commission, 2015;

BSc in Telecommunications and Informatics Engineering, ISCTE - Instituto Universitário de Lisboa (ISCTE-IUL), EUR-ACE (EUROpean ACcredited Engineer) Label, president of the evaluation commission, 2014;

BSc in Electrical Engineering – Electrical Power Systems, Instituto Superior de Engenharia do Porto (ISEP), EUR-ACE (EUROpean ACcredited Engineer) Label, president of the evaluation commission, 2014;

BSc in Electrical Engineering, Instituto Superior de Engenharia do Porto (ISEP), EUR-ACE (EUROpean ACcredited Engineer) Label, president of the evaluation commission, 2014;

MSc in Electrical Engineering – Electrical Power Systems, Instituto Superior de Engenharia do Porto (ISEP), EUR-ACE (EUROpean ACcredited Engineer) Label, president of the evaluation commission, 2013;

MSc in Electrical Engineering, Instituto Superior de Engenharia do Porto (ISEP), EUR-ACE (EUROpean ACcredited Engineer) Label, president of the evaluation commission, 2013;

Integrated Master in Physical Engineering, Universidade de Aveiro, EUR-ACE (EUROpean ACcredited Engineer) Label, president of the evaluation commission, 2012;

MSc in Telecommunications and Informatics Engineering, ISCTE - Instituto Universitário de Lisboa (ISCTE-IUL), EUR-ACE (EUROpean ACcredited Engineer) Label, president of the evaluation commission, 2012;

Integrated Master in Electrical and Computer Engineering, Faculdade de

Engenharia da Universidade do Porto (FEUP), EUR-ACE (EUROpean ACcredited Engineer) Label, president of the evaluation commission, 2012.

#### **4.1.16 Juries of Academic and Research Degrees**

##### **Agregação (Aggregation/Habilitation)**

Doctor Eng. João Carlos Amaro Ferreira, in Information Technology Sciences, ISCTE-IUL, 2019;

Doctor Eng. Paulo Fernando Pereira de Carvalho, in Computer Science and Engineering, FCTUC, 2018;

Doctor Eng. Octavian Adrian Postolache, in Electrical and Computer Engineering, IST/UL, 2016;

Doctor Eng. António Barbosa Lobo Ribeiro, in Physics, Faculdade de Ciências da Universidade do Porto, 2013;

Doctor Eng. Henrique Manuel Gomes, in Electronic and Telecommunications Engineering, Universidade do Algarve, 2012;

Doctor Eng. Carlos Jorge Ferreira Silvestre, in Electrical and Computer Engineering, IST/UTL, 2011;

Doctor Eng. Pedro Miguel Pinto Ramos, in Electrical and Computer Engineering, IST/UTL, 2010;

Doctor Eng. Marcelino Bicho Santos, in Electrical and Computer Engineering, IST/UTL, 2010;

Doctor Eng. Jorge Manuel dos Santos Ribeiro Fernandes, in Electrical and Computer Engineering, IST/UTL, 2010;

Doctor Eng. Eduardo José Ramos Morgado, in Electrical and Computer Engineering, IST/UTL, 2009;

Doctor Eng. José Miguel Costa Dias Pereira, in Electrical and Computer Engineering, IST/UTL, 2008;

Doctor Eng. Silvestre Dias Antunes, in Mechanical Engineering, IST/UTL, 2004.

### **Habilitation (Habitação)**

Doctor Bruno Miguel Soares Gonçalves, Habilitation for Scientific Coordination (Provas de Habitação para o exercício de Funções de Coordenação Científica), Instituto Superior Técnico/UTL, February 2012.

### **Coordinator Professor**

Instrumentation and Measurement, Escola Superior de Tecnologia, Instituto Politécnico de Setúbal, July 2005;

Instrumentation and Measurement – Group of Processing and Signal Transmission, Escola Superior de Tecnologia do Instituto Politécnico de Setúbal, June 2000;

Electrical Engineering (Group of Electronics and Telecommunications), Instituto Superior de Engenharia do Instituto Politécnico do Porto, March, 1998.

### **Ph.D.**

Ricardo Alexandre Marques Lameirinhas, Ph.D. in ECE, IST/UL, November 2024, “Nanoantennas and Biosensors: An Integrated Approach”;

Diogo Miguel Bárbara Coroas Prista Caetano, Ph.D. in ECE, IST/UL, March 2021, “Circuits and Signal Processing for Magnetoresistive Sensor Arrays”;

Nelson Filipe Pereira dos Santos, Ph.D. in ECE, IST/UL, September 2021, “Conversores Isolados para Redes Residenciais de Baixa Tensão em Corrente Continua”;

João Filipe Dias Guerreiro, Ph.D. in ECE, IST/UL, June 2020, “DVFS Modeling for Energy-Efficient GPU Computing”;

Luís Miguel Moreira Mendes, Ph.D. in ECE, IST/UL, February 2020, “Analysis, Modeling and Synthesis of CMOS Radio Frequency Discrete Tuning Varactors”;

Mrinalinee Pandey, Ph.D. in ECE, IST/UL, February 2020, “Design of CMOS

Active Inductors and its Applications”;

António Manuel Lourenço Canelas, Ph.D. in ECE, IST/UL, September 2019, “Yield-aware Analogue IC Design and Optimization in Nanometer-scale Technologies”;

Joshin Parakkulangarayil Krishnan, Ph.D. in ECE, IST/UL, February 2019, “Complex-Valued Image Restoration for Interferometric Phase Denoising and Phase Retrieval”;

Alessandro Parrella, PhD in Information Technology and Electrical Engineering, Università degli Studi di Napoli Federico II, February 2019, “Magnetic Material Characterization and Magnet Axis Displacement Measurement for Particle Accelerators”;

Diogo Rodrigues Oliveira de Brito, Ph.D. in ECE, IST/UL, December 2018, “Radio Pulsar System for Navigation”;

Alberto López Martínez, Ph.D. in Electrical and Electronics Engineering, University of Oviedo, Spain, July 2018, “Estudio de la Señal Electrooculográfica y su Aplicación a Sistemas Médicos Asistenciales”;

João Paulo Narciso dos Reis, Ph.D. in ECE, IST/UL, July 2018, “Contributo para a Autoavaliação de Sensores Resistivos em Obras de Arte de Engenharia Civil”;

Tiago João Nunes Domingues, Ph.D. in ECE, IST/UL, January 2018, “Click Modulation”;

Bruno André Marçal Jacinto, Ph.D. in ECE, IST/UL, December 2017, “Digitally Controlled DC-DC Buck Converter for SoC”;

Giordana Severino, Ph.D. in Engineering, Department of Engineering, University of Sannio, Benevento, Italy, October 2017, “High precision PCB rotating coil for magnets’ magnetic measurements”. Thesis evaluation;

Domenico Caiazza, Ph.D. in Engineering, Department of Engineering, University of Sannio, Benevento, Italy, October 2017, “Metrological performance

enhancement of wire methods for magnetic field measurements in particle accelerators”. Thesis evaluation;

Dário Jerónimo Loureiro Pasadas, Ph.D. in ECE, IST/UL, May 2017, “Characterization of Defects by Eddy Current Image Constructions”;

Paula Cristina Alves Pereira, Ph.D. in ECE, IST/UL, April 2017, “Multiple Phase Ring Oscillators”;

Tiago Jorge Rocha, Ph.D. in ECE, IST/UL, February 2017, “Velocity Induced Eddy Current Testing”;

Pedro Daniel Graça Casau, Ph.D. in ECE, IST/UL, November 2016, “Synergistic Hybrid Feedback Control with Applications to Autonomous Air Vehicles”;

Taimur Gibran Rabuske Kuntz, Ph.D. in ECE, IST/UL, June 2016, “Charge-Sharing SAR ADCs for Low-Voltage Low-Power Applications”;

José Carlos Sequeira Martins dos Santos, Ph.D. in ECE, IST/UL, June 2015, “Development and Implementation of an Impedance Measuring System Applied to Viscosity Sensors”;

Tiago Manuel Oliveira Henriques Moita, Ph.D. in ECE, IST/UL, March 2015 “Characterization Test Preparation for Mixed-Signal Integrated Circuits”;

Eduardo Correia Pinheiro, Ph.D. in ECE, IST/UL, December 2013, “Unobstructive Vital Signs Monitoring of Wheelchair Users”;

Abdolkarim Pahlani, Ph.D. in ECE, IST/UTL, March 2012, “Active Cooperative Perception in Networked Robot Systems”;

Vítor Manuel Rodrigues Viegas, Ph.D. in ECE, IST/UTL, January 2012, “Plataformas de Interoperabilidade para Sistemas de Instrumentação, Medida e Controlo”;

José António Rodrigues Germano, Ph.D. in ECE, IST/UTL, October 2011, “A Hand-Held Microsystem for Biological Analysis”;

José Ângelo Rebelo Sarmento, Ph.D. in ECE, IST/UTL, July 2011, “Optimized Digital Clock and Data Recovery Architectures”;

Antonino Petrolino, Ph.D. in ECE, IST/UTL, July 2011, “Development of Efficient and Accurate SISO and MIMO Multipath Fading Channel Simulators”;

Svetislav Momcilovic, Ph.D. in ECE, IST/UTL, June 2011, “Parallel Video Coding on Multi-Core Platforms”;

Carlos Leong, Ph.D. in ECE, IST/UTL, June 2011, “Design of High-Performance and Testable Globally Asynchronous Locally Synchronous Systems for Medical Imaging Applications”;

Rui Pedro Batoreo Amaral, Ph.D. in ECE, IST/UTL, April 2011, “Indexação de Programas Noticiosos”;

Maria Isabel de Araújo Godinho, Ph.D. in Physics, Faculdade de Ciências, Universidade de Lisboa, March 2011, “Implementação de um Sistema Experimental e Aplicação Metrológica para a Materialização do Ohm e Calibração de Resistências-Padrão”;

Catarina Isabel Carvalheiro Brites, Ph.D. in ECE, IST/UTL, March 2011, “Explorando a Modelação do Ruído de Correlação em Codificação de Vídeo Wyner-Ziv”;

Sónia Alexandra Ferreira de Magalhães Antunes Pelizzari, Ph.D. in ECE, IST/UTL, February 2011, “Oil Spill Detection Using SAR Images”;

Ana Paula Filipe Tomé, Ph.D. in Architecture, IST/UTL, October 2010, “Visão Computacional da Mobilidade em Espaços Informais de Aprendizagem para um Método de Análise Espaço-Uso. Um caso de Estudo”;

Indira Nolivos Alvarez, Free University of Brussels, October 2010, “A Bayesian Model to Construct a Knowledge Based Spatial Decision Support System for the Chaguana River Basin”;

Jorge Filipe Leal Costa Semião, Ph.D. in ECE, IST/UTL, July 2010, “Power-

Supply and Temperature Based Methodologies to Improve Tolerance and Detection of Delay Faults in Synchronous Digital Circuits”;

Ricardo Filipe de Queirós, Ph.D. in ECE, IST/UTL, March 2008, “Medidas de Alta Resolução Utilizando Ultrasons”;

Álvaro Silva Ribeiro, Ph.D. in Physics, Faculdade de Ciências, Universidade de Lisboa, July 2006, “Avaliação de Incertezas de Medição em Sistemas Complexos Lineares e Não-lineares”;

José Luís Correia da Mata, Ph.D. in Physics, IST/UTL, July 2004, “Modelos e Técnicas de Instrumentação para Medidas Simultâneas de Densidade e Viscosidade de Líquidos”;

Maria da Conceição Falcão Líbano Monteiro da Costa Macedo, Ph.D. in ECE, IST/UTL, December 2003, “Dynamic Characterization of Analogue to Digital Converters Exhibiting Input Slope Dependent Nonlinearities”;

Manuel José Freire Fonseca da Silva, Ph.D. in ECE, IST/UTL, January 2003, “Sistema Automático de Medida de Impedâncias”;

Francisco André Corrêa Alegria, IST, Ph.D. in ECE, IST/UTL, June 2002, “Caracterização Estática e Dinâmica de Conversores Analógico/Digitais pelo Método do Histograma”;

Jorge Manuel dos Santos Ribeiro Fernandes, Ph.D. in ECE, IST/UTL, March 2000, “Conversores A/D com Arquitecturas do Tipo Paralelo”;

José Miguel Costa Dias Pereira, Ph.D. in ECE, IST/UTL, December 1999, “Técnicas para Aumento do Desempenho em Sistemas de Digitalização de Sinais”;

Bernardo Maria Pereira Barata Gorjão Henriques, Ph.D. in ECE, IST/UTL, October 1995, “Circuitos Integrados em Tecnologia CMOS Digital para Conversão de Sinal Digital-Analógico de Alta Velocidade”;

Helena Maria dos Santos Geirinhas Ramos, Ph.D. in ECE, IST/UTL, January 1995, "Modelização do Comportamento de Materiais Ferromagnéticos Macios Sujeitos a

Campos Magnéticos de Direcção Variável";

Artur Fernando Delgado Lopes Ribeiro, Ph.D. in ECE, IST/UTL, October 1990, "Gravação Magnética em Materiais de Partículas".

### **Equivalence to Ph.D.**

Bo Feng, University of Lisbon, November 2018;

Octavian Adrian Postolache, Technical University of Lisbon, July 2008.

### **Researcher**

Assistant Researcher, Rui Palha de Mello Freitas, INETI, March 2002.

### **M.Sc.**

Cláudia Alexandra de Sousa Furtado, M.Sc. in Electronics Engineering, IST/UL, June 2019, "IIoT-based Inventory Management";

Tiago da Silva Barra, M.Sc. in Electronics Engineering, IST/UL, April 2019, "Planning, Development and Implementation of Monitoring System for Remotely Controlled Car";

Bernardo Ribeiro de Matos, M.Sc. in Electronics Engineering, IST/UL, November 2018, "Develop, implement and characterize an electric energy monitoring device";

André Gonçalves Torres, M.Sc. in Engineering Physics, IST/UL, November 2017, "Preliminary Design of the ITER Magnetic Diagnostic Integrators";

João Miguel Correia Freire, M.Sc. in ECE, IST/UTL, December 2012, "Smart Sensors for Ubiquitous Health Monitoring of Wheelchair Users";

Pedro Miguel Mouta Rodrigues, M.Sc. in ECE, IST/UTL, February 2008, "Satellite Attitude Determination with an Optical Position Sensing Detector";

Miguel António Felizardo da Costa, M.Sc. in ECE, IST/UTL, February 2008, "New Instrumentation for Superheated Droplets Detectors";

Luís Miguel da Silva Gurriana, M.Sc. in ECE, IST/UTL, October 2004, “Implementação e Caracterização Metrológica de um Sistema de Medida para Monitorização da Qualidade da Água”;

João Bernardo Pereira Correia, M.Sc. in ECE, IST/UTL, January 2004, “Calibração e Correção da Sensibilidade Cruzada Utilizando o Modelo Adoptado pela Norma IEEE 1451.2”;

Vítor Manuel Rodrigues Viegas, M.Sc. in ECE, IST/UTL, June 2003, “Projecto e Implementação de um Sistema de Sensores Inteligentes Baseado na Norma IEEE 1451”;

Carlos Manuel Almeida Santos, M.Sc. in ECE, IST/UTL, October 2001, “Automatização dos Ensaios de Carga Vertical em Estacas de Fundações”;

Paulo Maia Santos, M.Sc. in ECE, IST/UTL, October 2000, “Sistema Telemétrico para Monitorização da Qualidade da Água”;

Francisco André Corrêa Alegria, M.Sc. in ECE, IST/UTL, October 1997, “Calibração Automática de Aparelhos de Medida”;

André Gil Martin Cardoso, April 1996, Faculdade de Engenharia da Universidade do Porto, "Síntese, análise e realização de filtros passivos";

José Miguel Costa Dias Pereira, IST/UTL, February 1995, “Identificação de Componentes e Sistemas Passivos em Radiofrequência”.

### **Project in Electronics Engineering**

Joana de Gomes Alves, Project in Electronics Engineering, IST/UL, July 2020, “Desenvolvimento método Delphi numa plataforma de apoio à decisão – Demonstração com caso de avaliação da eficiência de unidades hospitalares”;

Pedro Francisco Parracho dos Santos, Project in Electronics Engineering, IST/UL, July 2020, “Sistema automático de contabilização de automóveis para controlo de tráfego numa via pública”;

Guilherme David Marques Trindade, Project in Electronics Engineering, IST/UL,

July 2020, “An integrated space radiation-tolerant oscillator”;

Pedro Martins Almeida Ribeiro de Oliveira, Project in Electronics Engineering, IST/UL, January 2020, “Dedicated VPN Implementation in Secure System”;

Mário Diogo Patrício da Silva, Project in Electronics Engineering, IST/UL, January 2020, “High resolution magnetic scanner for cancer screening”;

Diogo Fernandes de Castro Brandão de Almeida, Project in Electronics Engineering, IST/UL, January 2020, “Conductivity Sensor for Agricultural Substrates”.

### **Pedagogical and Scientific Capabilities**

Manuel José Freire Fonseca da Silva, IST, July 1996.

### **Final Year Projects**

Pedro Pedroso, LEEC, IST/UTL, December 2007, "Módulo Educacional da Malha de Captura de Fase";

Rodrigo Parra and José Barreto, LEEC, IST/UTL, December 1998, "Sistema de telemetria para meio atmosférico e meio aquoso";

José Luís Crespo Simão Nunes and António Jorge de Sousa Narra, LEEC, IST/UTL, August 1998, "Optimização e Simulação de um Sistema de Transmissão Óptica TDM com Igualação Discreta";

André de Jesus and Pedro Ferreira, LEEC, IST/UTL, July 1998, "Comutação Fotónica de Solitões em Acopladores Não-Lineares de Fibras Ópticas";

Miguel Alexandre Cabral and Rui Filipe Efigénio Gomes, LEEC, IST/UTL, April 1998, "Tecnologias para Calibração de Conteúdo Visual MPEG-4";

Hélder Milheiros and Nuno Felizardo, LEEC, IST/UTL, December 1997, "Disrupção de Linhas Aéreas de Alta Tensão Face a Descargas Atmosféricas";

Paulo Manuel Martins dos Santos, LEEC, IST/UTL, October 1997, "Placa Multi-

Função para PC";

Adérito Machaieie, Fernando Mendes and Nuno Caldeira, LEEC, IST/UTL, August 1997, "Determinação, em Tempo Real, do Binário de uma Máquina Assíncrona pela Medição Digital dos Valores Instantâneos das Tensões e Correntes aos Terminais";

Angela de Dominicis, Erasmus student, LEEC, IST/UTL, April 1997, "Ground Electrodes Behaviour for Lightning Currents ";

Nuno Daniel Mendonça Leitão and Pedro Escudeiro Morais, LEEC, IST/UTL, November 1996, "Defeitos Múltiplos em Linhas de Transmissão de Energia Originados por Descargas Atmosféricas ";

Ana Isabel Gonçalves Fernandes and Rui Manuel Boavida Martinho, LEEC, IST/UTL, October 1996, "Automatização de um Analisador de Redes, de Espectros e Medida de Impedância";

João Saldanha Festas, LEEC, IST/UTL, September 1996, "Sobretensões em Linhas de Transmissão de Energia Causadas por Descargas Atmosféricas Indirectas";

Sérgio Rui Abrantes Simões, Erasmus student, LEEC, IST/UTL, September 1996, "Estudo do Comportamento das Linhas de Média Tensão Face a Descargas Atmosféricas";

Manuel Chen, Erasmus student, University of Erlangen, Nuremberg, Germany, IST, July 1996, "A graphical interface under windows for the test of ADCs using the VXI Standard";

Maria de Fátima Trindade Guerreiro, Adriano Miguel Pinto de Almeida Farinha Rodrigues and Pedro Miguel Pinto Ramos, LEEC, IST/UTL, November 1995;

Francisco André Corrêa Alegria, LEEC, IST/UTL, November 1995, "Placa Multifunção para PC";

J. A. Ferreira Lopes and J. O. Machado Vitorino, LEEC, IST/UTL, June 1995, "Implementação de um Sistema Automático de Medida da Condutividade de

Materiais Semicondutores Amorfos”;

Gilberto António Lopes, LEEC, IST/UTL, February 1995, “Sistema Automático para Determinar a Característica Magnética e Medir Perdas em Materiais Ferromagnéticos Macios Utilizando o Aparelho de Epstein”;

Maria da Conceição Falcão Líbano Monteiro, LEEC, IST/UT, January 1995.

#### **4.1.17 Juries for Academic Positions**

Assistant Professor, Electronics, DEEC, IST, June 2022.

Associate Professor, Electronics, DEEC, IST, March 2021.

Assistant Professor, Electronics, DEEC, IST, March 2021.

Adjunct Professor, Engenharia Eletrotécnica Marítima, perfis Sistemas Digitais, Microcontroladores e Computadores, Escola Superior Náutica Infante D. Henrique, January 2021.

Associate Professor, Electronics, DEEC, IST, July 2020.

Associate Professor, Electronics, DEEC, IST, July 2019.

Tenure Track as Professor at National University of Technology, Islamabad, Pakistan, Dr. Umair Manzoor, February 2019.

Associate Professor, Electronics, ISCTE-IUL, January 2019.

Associate Professor, Electronics, DEEC, IST, January 2017.

External expert in committees formed by Greek Universities for the evaluation of professors of different levels, since March 2014:

- University of the Aegean
- Technological Educational Institute of Athens
- Aristotle University of Thessaloniki
- Department of Electronic Engineering of Technological Education Institute of Athens
- Department of Informatics and Telecommunications of the University of

Peloponnese

- Department of Natural Resources Management and Agricultural Engineering of the Agricultural University of Athens
- Department of Informatics and Telematics of the Harokopio University
- Department of Civil Engineering and Surveying Engineering and Geomatics of the Technological Educational Institute of Athens
- Department of Mathematics of the University of the Aegean
- Department of Electrical and Computer Engineering of the National Technical University of Athens
- Department of Cultural Technology and Communication of the University of the Aegean
- Department of Informatics and Telecommunications of the National and Kapodistrian University of Athens
- Department of Civil Engineering of University of West Attica
- Department of Physics of the University of Thessaly
- Department of Production Engineering and Management of the International Hellenic University
- Department of Informatics Engineering of Technological Educational Institute of Peloponnese

Assistant Professor, Electrical Engineering, University of Évora, February 2012.

Assistant Professor, Computers, DEEC, IST, July 2011.

Full Professor, Electronics, DEEC, IST, December 2010.

Associate Professor, Electronics, DEEC, IST, December 2010.

Full Professor, Electronics or Computer, DEEC, IST, December 2009.

Associate Professor, Electronics, DEEC, IST, December 2009.

#### **4.1.18 Juries for Research Positions**

C-0011-22: International Call for PhD Hiring, under the Scope of the Project Laboratório Associado LA/P/0109/2020, IT, July 2022.

#### **4.1.19 Other Juries**

Prémio Luís Vidigal, 2014

### **4.2 University Extension**

#### **4.2.1. Post-University**

European Social Fund:

- Fundamentals of Laboratorial Instrumentation, action “Projecto Hidrometalúrgico”, in 1987;
- Instrumentation, action "Instalações e Sistemas de Energia Eléctrica", in 1986 and 1987.

#### **4.2.2 Pre-University**

European Social Fund:

- Instrumentation and Measuring Equipment, Metropolitano de Lisboa, 1996;
- Foundations of Measurements and Instrumentation, FUNDETEC, actions "Especialistas em Sistemas Industriais e Robóticos" and "Técnicos Base em Sistemas Industriais e Robóticos", in 1987;
- Laboratorial Instrumentation, FUNDETEC, actions "Especialistas em Sistemas Industriais e Robóticos" and "Técnicos Base em Sistemas Industriais e Robóticos", in 1987.

#### **4.2.3 Seminars, Talks and Short-term Courses**

- “Shaping the Cities of the Present and of the Future: Smart Urban Planning of Sustainable Cities”. Keynote speech at the 9th International Conference on Intelligent Technologies (ICIT – 2024), Manila, October 2024;
- “Automated Measuring Systems for Environmental Monitoring”. Invited talk under the IEEE Instrumentation and Measurement Society Distinguished Lecturer presented in Aristotle University of Thessaloniki, Greece, July 2018;

- “Globalization: past, present and future”. Invited talk under the IEEE Instrumentation and Measurement Society Distinguished Lecturer presented in the American University of Armenia, June 2018;
- “Wireless Sensor Networks”. Plenary talk under the IEEE Instrumentation and Measurement Society Distinguished Lecturer program presented at the 22nd IMEKO TC 4 International Symposium and 20-th International Workshop on ADC Modelling and Testing, 14-15 September 2017, Iasi, Romania;
- “Health Monitoring in Ambulatory Regime. Telecare”. Invited talk as keynote speaker under the IEEE Instrumentation and Measurement Society Distinguished Lecturer presented at the 13th International Conference on Healthcare and Life Science Research (ICHLSR), May 26-27, 2017, Lisbon, Portugal;
- “Environmental Monitoring”. Invited talk as keynote speaker under the IEEE Instrumentation and Measurement Society Distinguished Lecturer program presented at the IEEE Mexican Humanitarian Technology Conference 2017, March 29-31, 2017, Puebla, Mexico;
- “Meet I&M: Environmental Monitoring”. Invited talk and participation in a round table at the IEEE Mexican Humanitarian Technology Conference 2017, March 29-31, 2017, Puebla, Mexico;
- “Wireless Sensor Networks and their Applications”. Plenary talk under the IEEE Instrumentation and Measurement Society Distinguished Lecturer program presented at the World Congress on Engineering and Applications - 2016 (WCEA - 2016), 16 -17 December 2016, Bangkok, Thailand;
- "Automated Measuring Systems for Environmental Monitoring". Invited talk as keynote speaker under the IEEE Instrumentation and Measurement Society Distinguished Lecturer program presented at the Second International Symposium on Intelligent Systems Technologies and Applications (ISTA'16), September 21-24, 2016, Jaipur, India;
- “Tactile Sensors for Industrial, Medical and Robotic Applications”, 7th International Conference on Advanced Concepts on Mechanical Engineering

(ACME 2016). Invited talk as keynote speaker under the IEEE Instrumentation and Measurement Society Distinguished Lecturer program in Plenary Session, Iasi, Romania, 9<sup>th</sup> June 2016;

- “Wireless Sensor Networks for Smart/Precise Agriculture”, 7th International Conference on Advanced Concepts on Mechanical Engineering (ACME 2016). Invited talk under the IEEE Instrumentation and Measurement Society Distinguished Lecturer program in Session ACME-07-01 Technologies in Agriculture and Food Processing, Iasi, Romania, 9<sup>th</sup> June 2016;
- “Microwave Doppler Radar in Unobtrusive Health Monitoring”, invited talk in 2014 Joint IMEKO TC1-TC7-TC13 Symposium, Funchal, Madeira Island, 4<sup>th</sup> September 2014;
- “Marine Technology Instrumentation”, short-term course, The IP Martin Summer School Marine Technology Instrumentation, Technical University of Catalonia (UPC), 29<sup>th</sup> June - 18<sup>th</sup>, July 2014;
- Invited Professor, Warsaw University of Technology, May-June 2014. Seminars on:
  - “Directives, Standards, Regulation, Industrial property”
  - “Health Monitoring”
  - “Environmental Monitoring”
  - “Tactile Sensors: Industrial, Robotic and Medical Applications”
  - “Wireless Sensor Networks (WSN)”
  - “Globalization: The World today and in the future”
- “Registo de Saúde Electrónico: Porquê? Como?”, invited talk in seminar “Relação Terapêutica em Enfermagem. A Multidimensionalidade da Comunicação, 4-5 January 2013;
- “Redes Sem Fios de Sensores (Wireless Sensor Networks)”, invited talk, 2012-2013 Academic Year Opening Ceremony, Escola Naval, 16<sup>th</sup> November 2012;
- “Smart System for Biological Parameters Monitoring Based on NI Technology”, invited talk, NI Days2007, April 2007;
- “Automated Remote Electronic Instrumentation: Virtual Instrumentation”,

(<http://db.intersek.ntnu.no/athens/catalog/show/137>), IST1 course, Athens Programme, March 2007;

- “Sensores de Fibras Ópticas”, invited talk, Mestrado em Recuperação e Conservação do Património Construído, Instituto Superior Técnico, May 2006;
- “National Instruments and the IT Instrumentation and Measurements Group”, invited talk, NIDays, March 2006;
- “Formação e Qualificação de Técnicos de Instalações Eléctricas”, seminar, CS-01 of CNQ, June 2002;
- “Uma Visão sobre Metrologia: Presente e Futuro”; invited speaker, Plenary Session of Jornadas de Engenharia de Automação, Controlo e Instrumentação, Escola Superior de Tecnologia do Instituto Politécnico de Setúbal, May 2002;
- Invited talks: “Qualidade; Acreditação de Laboratórios de Calibração e de Ensaios; Compatibilidade Electromagnética”; invited lesson, “Controlo e Transmissão de Dados em Sistemas de Medida via RS 232 e IEEE 488”, Convénio ICCTI/UEM (Projecto 423 UEM), Universidade Eduardo Mondlane, Maputo, República of Mozambique, November 2001;
- "Desenvolvimento e Teste de Conversores A/D", seminar, Instituto de Engenharia de Sistemas e Computadores (INESC), January 2000;
- "Ensino Universitário e Cursos Técnicos Profissionais", in seminar "A Qualidade no Sector Eléctrico", Comissão Sectorial 01 (CS-01), Conselho Nacional da Qualidade (CNQ), November 1999;
- Qualidade (Quality) and Compatibilidade Electromagnética - Directivas Comunitárias, Normas e Ensaios (Electromagnetic Compatibility – Directives, Standards and Tests), Programme SOCRATES: Higher Education ERASMUS, Faculty of Electrical Engineering, "Gh. Asachi" Technical University, Iasi, Romania, January 1999;
- "Compatibilidade Electromagnética" (Electromagnetic Compatibility), IEEE chapters Industry Applications Society, Industrial Electronic Society and Power Electronic Society, Instituto Superior Técnico and Instituto de Telecomunicações, January 1998;

- "Interferência e Compatibilidade Electromagnéticas (EMI/EMC)" (Electromagnetic Interference and Susceptibility), Departamento de Armas e Electrónica, Escola Naval, 5th and 6th June 1995.

#### **4.2.4 Juries for Professional Positions**

Director of the Metrology Department, Instituto Português da Qualidade, I.P, IPQ, April 2016.

Director of Unit National Metrology Laboratory, Instituto Português da Qualidade, I.P, IPQ, January 2015.

Director of the Metrology Department, Instituto Português da Qualidade, I.P, IPQ, February 2010.

Buildings and Spaces Manager, Departamento de Engenharia Electrotécnica e de Computadores, IST/UTL, December 2010.

Coordinator of the Administrative Services, Departamento de Engenharia Electrotécnica e de Computadores, IST/UTL, December 2010.

Finance Services Coordinator, Departamento de Engenharia Electrotécnica e de Computadores, IST/UTL, December 2010.

#### **4.2.5 Other Juries**

Prémio Inovação Jovem Engenheiro, Ordem dos Engenheiros, 2010.

## **5. RESEARCH AND DEVELOPMENT**

### **5.1 R&D and Other Projects**

**5.1.1** “TailorPhy - Smart Sensors and Tailored Environments for Physiotherapy”, FCT 2016-2019;

**5.1.2** “EHR-Physio - Electronic Health Records: Needs, Requirements, and Barriers of Adoption in Physiotherapy”, FCT, 2013-2015;

**5.1.3** “ENVIAS - Assessment of the Contribution of Environmental Factors to the Prevalence and Exacerbation of Asthma in School Children”, PTDC/AAG-MAA/4609/2012, FCT, 2012;

- 5.1.4** “Compo-ball”, European Union, FP7, 2011-2013;
- 5.1.5** “EHR-Wheel - Electronic Health Records for Wheelchairs Users”, RIPD/APD/109639/2009, FCT, 2010-2012;
- 5.1.6** “Heavy Metals Sensors for in-situ, Online Water Quality Monitoring System”, FCT, 2010;
- 5.1.7** “Home telecare”, PT Inovação, 2010;
- 5.1.8** “Blood Pressure Measurement”, IEEE Instrumentation and Measurement, TC-25 Committee;
- 5.1.9** “SMARTCOL - Modelação e Controlo Inteligente de Processos em Coluna Utilizando Sistemas Distribuídos de Sensores e Actuadores – Caso de Estudo: Extracção Líquido-Líquido”. (Modelling and Smart Control of Column Processes Using Sensors and Actuators Distributed Systems – Case Study: Liquid-Liquid Extraction);
- 5.1.10** “SSNet-MEMS - Redes de Sensores Inteligentes para Sistemas Móveis de Monitorização Ambiental” (Smart Sensors Networks for Mobile Environmental Monitoring Systems);
- 5.1.11** “SmartCare - Ambientes Inteligentes Baseados em Sensores Distribuídos Não-obstrutivos para Cuidados de Saúde” (Smart Environments Based on Non-obstrutive Distributed Sensors for Healthcare);
- 5.1.12** “StresAlc - Reactividade ao Stress, Stress Diário e o Consumo de Álcool nos Jovens” (Reactivity to Stress, Daily Stress and Alcohol Consumption in Youngsters);
- 5.1.13** “Corredor de Bus Intermitente (CBI)” (Intermittent Bus Lane);
- 5.1.14** “STRUCTMONIT- Monitorização e Modelação de Estruturas de Engenharia Civil Utilizando Sensores Ópticos de Redes de Bragg” (Monitoring and Modelling of Civil Engineering Structures using Bragg Gratings);
- 5.1.15** Ciencia Viva CV-1572-2006 “GOA - Listening Dolphins and Measuring the Water Quality Where They Live”, 2006-2008;
- 5.1.16** National Network for Brain Imaging, Lisbon Consortium;

- 5.1.17** “SMARDO - Smart System for Monitoring of Wild Dolphin – Anthropogenic Factors Interactions”, IT, 2005-2008;
- 5.1.18** “TIM - Magnetic Induction Tomography- Development of the instrumentation and measuring methods for biomedical applications”, POSI/EEA-ESE/60397/2004, FCT, 2005-2008;
- 5.1.19** “Disseminação horária pelo território nacional (continente, Madeira e Açores)” (Time dissemination in Portugal), IPQ, 2004;
- 5.1.20** “ESPECTRO - Monitorização e controlo do espectro - Integração de infra-estruturas” (Monitoring and control of the spectrum – Infrastructures’ integration), ANACOM, 2002-2011;
- 5.1.21** “Actualização e Extensão das Capacidades de Medição do Grupo de Instrumentação e Medidas do Instituto de Telecomunicações – Lisboa” (Actualization and Extension of the Measuring Capabilities of the Institute of Telecommunications – Lisbon - Instrumentation and Measurements Group, Conc-REEQ/1118/2001, FCT, 2002;
- 5.1.22** “AQA - Monitorização Global com Sensores Inteligentes para Avaliação da Qualidade do Ambiente” (Global Monitoring with Smart Sensors for Environment Quality Evaluation), PNAT/1999/EEI/15052, FCT, 2001-2005;
- 5.1.23** “Metrological Characterisation of Analog-to-Digital Converters Based Instruments, "MECADIN"”. Submitted in 1999 to the EC GROWTH program, 5th Framework Programme;
- 5.1.24** “EUropean Project for ADC-based devices Standardization (EUPAS)”, 1998-2009;
- 5.1.25** "Remote Monitoring and Control of Industrial Environments", submitted in July 1998 to NATO Science for Peace Program;
- 5.1.26** Services to Laboratório de Metrologia e Ensaios do CET (LMECET), Portugal Telecom (PT), SA, July 1998 to January 1999;
- 5.1.27** "Health Emergency Management and Coordination through Telemetric Operational Resources (HECTOR), Instituto Nacional de Emergência Médica (INEM), July 1997 to December 1998;

**5.1.28** SPRINT RA 083, "Technical Assistance to Industry to Minimize Electrostatic Problems", 1990-1993;

**5.1.29** "Cálculo do Campo Electromagnético em Estruturas e Dispositivos das Telecomunicações e da Energia" (Determination of the Electromagnetic Field in Telecommunications and Energy Structures), Program CIENCIA, Subprogram III, Medida M -Ciências Exactas e da Engenharia, contract nº0013/M/90, 1990;

**5.1.30** Between 1988 and 1994, Electromagnetismo Aplicado, Centro de Electrotecnia da Universidade Técnica de Lisboa:

- "Fenómenos de Histerese Magnética" (Magnetic Hysteresis Phenomena);
- "Aplicações da Óptica em Electrotecnia" (Applications of Optics to Electrotechnics);
- "Métodos Numéricos Aplicados ao Cálculo do Campo Electromagnético" (Application of Numerical Methods to Electromagnetic Fields Evaluation).

Between December 1994 and October 1998, Centro de Electrotecnia Teórica e Medidas Eléctricas, Instituto Superior Técnico:

Linha 1 – Electromagnetismo Aplicado (Applied Electromagnetism)

Projecto 1B – "Aplicações da Óptica em Electrotecnia"; (Applications of Optics to Electrotechnics)

Projecto 1C – "Fenómenos de Histerese Magnética" (Magnetic Hysteresis Phenomena).

Linha 3 – Sistemas de Medida (Measuring Systems)

Projecto 3A – "Métodos de Medida" (Methods of Measurement);

Projecto 3B – "Automatização de Procedimentos de Medida" (Automation of Measurement Procedures);

Projecto 3C – "Instrumentação Electrónica" (Electronic Instrumentation).

## **5.2 Participation in Scientific Research Institutions**

**5.2.1** Instituto de Telecomunicações - Grupo de Instrumentação e Medidas – since October 1997. Founder of Grupo de Instrumentação e Medidas, Senior Researcher, Group Leader and until 2020, Basic Sciences and Enabling Technologies Scientific

Area Coordinator;

- 5.2.2** Instituto de Energia - INTERG, researcher and project leader from 1990 to 1999;
- 5.2.3** Centro de Electrotecnia Teórica e Medidas Eléctricas do Instituto Superior Técnico, researcher, project leader and collaborator since 1994 until October 2000;
- 5.2.4** Centro de Electrotecnia da Universidade Técnica de Lisboa, Instituto Nacional de Investigação Científica, researcher and project leader, since 1976 until its extinction.

### **5.3 Participation in International Congresses and Scientific Meetings**

- 5.3.1** The 12th International Symposium on Advanced Topics in Electrical Engineering (ATEE 2021), March 2021, Bucharest, Romania;
- 5.3.2** The 11th International Symposium on Advanced Topics in Electrical Engineering (ATEE 2019), March 2019, Bucharest, Romania;
- 5.3.3** XXII IMEKO World Congress, September 2018, Belfast, Great Britain;
- 5.3.4** 22nd IMEKO TC4 Symposium and 20th International Workshop on ADC Modelling and Testing, September 2017, Iași, Romania;
- 5.3.5** 13th International Conference on Healthcare and Life Science Research (ICHLSR), 26-27 May 2017, Lisbon, Portugal;
- 5.3.6** IEEE Mexican Humanitarian Technology Conference 2017, March 2017, Puebla, Mexico;
- 5.3.7** World Congress on Engineering and Applications - 2016 (WCEA - 2016), December, 2016, Bangkok, Thailand;
- 5.3.8** Second International Symposium on Intelligent Systems Technology and Applications (IST'16), September 2016, Jaipur, India;
- 5.3.9** The 6th International Conference on Advanced Concepts on Mechanical Engineering (ACME2016), June 2016, Iasi, Romania;
- 5.3.10** IEEE Instrumentation and Measurement Technology Conference, May 2016, Taipei, Taiwan;
- 5.3.11** 2014 Joint IMEKO TC1-TC7-TC13 Symposium, Funchal, Madeira Island,

September 2014;

- 5.3.12** 2014 IEEE International Symposium on Medical Measurements and Applications - MeMeA, June 2014, Lisbon, Portugal;
- 5.3.13** IMEKO Symposium on Temperature and Thermal Measurements in Industry and Science (TEMPMEKO 2013), October 2013, Funchal, Madeira, Portugal;
- 5.3.14** IMEKO 17<sup>th</sup> TC4 and 3<sup>rd</sup> TC19 Symposium, Kosice, Slovakia, September 2010;
- 5.3.15** IEEE International Conference on Industrial Technology, Vina del Mar, Chile, March 2010;
- 5.3.16** XIX IMEKO World Congress, September 2009, Lisbon, Portugal;
- 5.3.17** IMEKO 2<sup>nd</sup> TC 19 Symposium, Budapest, Hungary, September 2008;
- 5.3.18** IMEKO 20<sup>th</sup> TC3 & 3<sup>rd</sup> TC16 & 1<sup>st</sup> TC22 International Conference, Mérida, México, November 2007;
- 5.3.19** 2<sup>a</sup> Conferência Nacional da Sociedade Portuguesa de Metrologia, Funchal, Madeira, October 2007;
- 5.3.20** IMEKO TC4-TC19 Symposium, Iasi, Romania, September 2007;
- 5.3.21** IMEKO TC18, The 3<sup>rd</sup> International Symposium on Measurement, Analysis and Modeling of Human Functions (ISHF 2007), June 2007, Lisbon, Portugal;
- 5.3.22** Conftele 2007, Peniche, Portugal, May 2007;
- 5.3.23** IEEE International Conference on Industrial Technology, (ICIT 2006), December 2006, Mumbai, India;
- 5.3.24** The 5th IEEE Conference on Sensors, IEEE Sensors 2006, October 2006, Daegu, South Korea;
- 5.3.25** AMSE (Association for the Advancement of Modelling and Simulation Techniques in Enterprises) International Conference on Model and Simulation: Models and Simulation in Economy and Administration, September 2006, Bahia Blanca, Argentina;
- 5.3.26** IMEKO World Congress, September 2006, Rio de Janeiro, Brazil;
- 5.3.27** IMEKO TC1 and TC7 Symposium on Metrology and Measurement Applications

- in the Era of Internet Working, September 2005, Ilmenau, Germany;
- 5.3.28** 14th TC4 Symposium of IMEKO, September 2005, Gdynia, Poland;
- 5.3.29** VII Conference on Advanced Mathematical and Computational Tools in Metrology, June 2005, Costa da Caparica, Portugal;
- 5.3.30** Conftele 2005, April 2005, Tomar, Portugal;
- 5.3.31** IMEKO TC-4 Symposium on Measurements for Research and Industrial Applications and 9th Workshop on ADC Modeling and Testing, Athens, Greece, September 2004;
- 5.3.32** IEEE Third International Conference on Signals, Systems, Devices, March 2004, Sousse, Tunisia;
- 5.3.33** XVII IMEKO World Congress, Dubrovnik, Croatia, 2003;
- 5.3.34** The First IEEE International Conference on Sensors, IEEE Sensors 2002, June 2002, Orlando, Florida, USA;
- 5.3.35** Fifth International Conference on Electronic Measurement & Instruments, November 2001, Guilin, Popular Republic of China;
- 5.3.36** 6º Seminário Anual de Automática, Electrónica Industrial e Instrumentacion (SAAEI2001), September 2001, Matanzas, Cuba;
- 5.3.37** 11th International Symposium on Trends in Electrical Measurements and Instrumentation and the 6th Workshop on ADC Modelling and Testing, IMEKO TC-4, September 2001, Lisbon, Portugal;
- 5.3.38** METROLOGIA 2000, December 2000, S. Paulo, Brazil;
- 5.3.39** IEEE Conference on Precision Electromagnetic Measurement (CPEM 2000), May 2000, Sidney, Australia;
- 5.3.40** International Conference on Electrical and Power Engineering (EPE'99), November 1999, Iasi, Romania;
- 5.3.41** Conftele'99, April 1999, Sesimbra, Portugal;
- 5.3.42** 5th IEEE International Conference on Electronics, Circuits and Systems (ICECS'98), September 1998, Lisbon, Portugal;

- 5.3.43** IEEE MELECON'98, May 1998, Tel-Aviv, Israel;
- 5.3.44** XIV IMEKO World Congress, June 1997, Tampere, Finland;
- 5.3.45** IEEE IMTC/97, May 1997, Ottawa, Canada;
- 5.3.46** IEEE AFRICON'96, September 1996, Stellenbosch, South Africa;
- 5.3.47** IMEKO TC-4, 7th International Symposium on Modern Electrical and Magnetic Measurement, September 1995, Prague, Czech Republic;
- 5.3.48** IEEE Instrumentation and Measurement Technology Conference, May 1994, Hamamatsu, Japan;
- 5.3.49** IEEE MELECON'94, April, 1994, Antalya, Turkey;
- 5.3.50** IEEE AFRICON'92, September 1992, Swaziland;
- 5.3.51** CIGRE WG33 Meeting, September 1990, Estoril, Portugal, September;
- 5.3.52** IEEE Instrumentation and Measurement Technology Conference (IMTC/86), March 1986, Boulder, Colorado, USA.

## **5.4 Organization of Congresses and Scientific Meetings**

### **5.4.1 International**

- 5.4.1.1** Technical Program Committee Member, The 2<sup>nd</sup> International Conference on the Frontiers of Intelligent Control, Measurement and Signal Systems (FICMSS), January 2025, Nanjing, P. R. China;
- 5.4.1.2** Honorary Chair and Technical Program Committee Member, International Conference on Sensing and Instrumentation in IoT Era ISSI, August 2024, Azores, Portugal;
- 5.4.1.3** Technical Program Committee Member, International Conference on the Frontiers of Intelligent Control, Measurement and Signal Systems (FICMSS), January 2024, Changsha, P. R. China;
- 5.4.1.4** Technical Program Committee Member, Seventh International Symposium on Intelligent Systems Technologies and Applications (ISTA'23), December 2023, Bangalore, India;
- 5.4.1.5** Scientific Committee Member, 20th IEEE International Multi-

Conference on Systems, Signals & Devices 2023, February 2023, Mahdia, Tunisia;

**5.4.1.6** Steering Committee Member, 7<sup>th</sup> International Conference on Intelligent Technologies (ICIT – 2022), December 2022, Jakarta, Indonesia;

**5.4.1.7** Scientific Committee Member, Joint IMEKO TC1-TC7-TC13-TC18 Symposium 2022: “Cutting-edge measurement science for the future”, August 31st - September 1<sup>st</sup>, Porto, Portugal;

**5.4.1.8** Co-chair and International Program Committee Member, 6th World Congress on Engineering and Applications (WCEA - 2021), December 2021, Singapore;

**5.4.1.9** International Steering Committee Member, The 12th International Symposium on Advanced Topics in Electrical Engineering (ATEE 2021), March 2021, Bucharest, Romania;

**5.4.1.10** International Program Committee Member, IMEKO TC1-TC7-TC13-TC18 Symposium, July 2020, Warsaw, Poland;

**5.4.1.11** International Programme Committee Member, 4th World Congress on Engineering and Applications (WCEA – 2019), December 2019, Bali, Indonesia;

**5.4.1.12** Technical Program Committee Member, Fourth International Symposium on Intelligent Systems Technologies and Applications (ISTA'19), December 2019, Trivandrum, Kerala, India;

**5.4.1.13** Technical Program Co-Chair and Technical Committee Member, 2<sup>nd</sup> International Symposium on Sensors and Instrumentation in Internet of Things Era (ISSI), August 2019, Lisbon, Portugal;

**5.4.1.14** Organizing Committee, IMEKO 18<sup>th</sup> International Flow Measurement Conference (Flomeko2019), June 2019, Lisbon, Portugal;

**5.4.1.15** International Steering Committee Member, The 11th International Symposium on Advanced Topics in Electrical Engineering (ATEE 2019), March 2019, Bucharest, Romania;

- 5.4.1.16** International Program Committee Member, 2018 IEEE International Workshop on Metrology for the Sea, October 2018, Bari, Italy;
- 5.4.1.17** Technical Program Committee Member, International Conference on Sensing and Instrumentation in IoT Era (ISSI'18), September 2018, Shanghai, P.R. China;
- 5.4.1.18** Technical Program Committee Member, Fourth International Symposium on Intelligent Systems Technologies and Applications (ISTA'18), September 2018, Bangalore, India;
- 5.4.1.19** International Program Committee Member, The 2018 IEEE International Conference on INnovations in Intelligent SysTems and Applications (INISTA 2018), July 2018, Thessaloniki, Greece;
- 5.4.1.20** International Program Committee Member, 1<sup>st</sup> ASRES International Conference on Modeling, Analysis and Optimization (MAO – 2018), July 2018, Amsterdam, Netherlands.
- 5.4.1.21** Smart Cities Symposium (SCS'18), April 2018, University of Bahrain, Kingdom of Bahrain;
- 5.4.1.22** International Program Committee Member, 22nd IMEKO TC4 Symposium and 20th International Workshop on ADC Modelling and Testing, September 2017, Iași, Romania;
- 5.4.1.23** Steering Committee Member, International Conference on Advances in Computing, Communications and Informatics (ICACCI'17), September 2017, Karnataka, India;
- 5.4.1.24** Technical Program Committee Member, Third International Symposium on Intelligent Systems Technologies and Applications (ISTA'17), September 2017, Karnataka, India;
- 5.4.1.25** International Advisory Committee and International Program Committee Member, IMEKO TC19 Symposium on Environmental Instrumentation and Measurements (EnvImeko), August 2017, Aguascalientes, Mexico;

- 5.4.1.26** International Program Committee Member, 2017 Joint IMEKO TC1-TC7-TC13 Symposium: “Measurement Science Challenges in Natural and Social Sciences”, July/August 2017, Rio de Janeiro, Brazil;
- 5.4.1.27** Technical Program Committee Member, 2017 IEEE International Instrumentation & Measurement Technology Conference - I2MTC, May 2017, Torino, Italy;
- 5.4.1.28** International Steering Committee Member, The 10th International Symposium on Advanced Topics in Electrical Engineering (ATEE 2017), March 2017, Bucharest, Romania;
- 5.4.1.29** International Programme Committee Member, World Congress on Engineering and Applications - 2016 (WCEA - 2016), December, 2016, Bangkok, Thailand;
- 5.4.1.30** Technical Program Committee Member, The Second International Symposium on Emerging Topics in Circuits and Systems (SET-CAS'16), September 2016, Jaipur, India;
- 5.4.1.31** Program Committee Member, 2016 International Symposium on Innovations in Intelligent Systems and Applications (INISTA 2016), August 2016, Sinaia, Romania;
- 5.4.1.32** Honorary Committee Member, 2016 The 7<sup>th</sup> International Conference on Advanced Concepts in Mechanical Engineering (ACME 2016), June 2016, Iasi, Romania;
- 5.4.1.33** Program Committee Member, 2015 International Symposium on Innovations in Intelligent Systems and Applications (INISTA 2015), September 2015, Madrid, Spain;
- 5.4.1.34** Technical Program Committee Member, International Symposium on Emerging Topics in Circuits and Systems (SET-CAS'15), August 2015, Kerala, India;
- 5.4.1.35** Technical Program Committee Member, 2015 International Conference on Smart Sensors and Application (ICSSA2015), May 2015, Kuala Lumpur, Malaysia;

- 5.4.1.36** Technical Program Committee Member, 2015 IEEE International Instrumentation & Measurement Technology Conference - I2MTC, May 2015, Pisa, Italy;
- 5.4.1.37** International Steering Committee Member, IEEE "Advanced Topics in Electrical Engineering" – ATEE 2015, May 2015, Bucharest, Romania;
- 5.4.1.38** International Steering Committee Member, The 9th International Symposium on Advanced Topics in Electrical Engineering (ATEE 2015), March 2015, Bucharest, Romania;
- 5.4.1.39** Technical Program Committee Member, IEEE International Conference on Signal Processing, Informatics, Communication and Energy Systems (IEEE SPICES 2015), February 2015, Kozhikode, India;
- 5.4.1.40** Technical Program Committee Member, IEEE International Conference on Smart Instrumentation, Measurements and Applications - ICSIMA, November 2014, Kuala Lumpur, Malaysia;
- 5.4.1.41** International Programme Committee Member, 2014 Joint IMEKO TC1-TC7-TC13 Symposium, September 2014, Madeira, Portugal;
- 5.4.1.42** Scientific Committee Member, The 6<sup>th</sup> International Conference on Advanced Concepts in Mechanical Engineering (ACME 2014), June 2014, Iasi, Romania;
- 5.4.1.43** Co-chair, 2014 IEEE International Symposium on Medical Measurements and Applications – MeMeA, June 2014, Lisbon, Portugal;
- 5.4.1.44** Program Committee Member, 2014 IEEE International Symposium on Innovations in Intelligent Systems and Applications (IEEE INISTA 2014), June 2014, Arberobello, Italy;
- 5.4.1.45** Technical Program Committee Member, 2014 IEEE International Instrumentation & Measurement Technology Conference - I2MTC, May 2014, Montevideo, Uruguay;
- 5.4.1.46** Technical Program Committee Member, IEEE 11th International

Multi-Conference on Systems, Signals & Devices (SSD'14), February 2014, Castelldefels-Barcelona, Spain;

**5.4.1.47** Technical Program Committee Member, 2013 IEEE International Conference on Smart Instrumentation, Measurement and Applications, November 2013, Kuala Lumpur, Malaysia;

**5.4.1.48** National Committee, IMEKO Symposium on Temperature and Thermal Measurements in Industry and Science (TEMPMEKO 2013), October 2013, Funchal, Madeira, Portugal;

**5.4.1.49** Technical Program Committee Member, 2013 IEEE International Conference on Computational Intelligence and Virtual Environment for Measurement Systems and Applications (IEEE CIVEMSA 2013), July 2013, Milan, Italy;

**5.4.1.50** General Co-chair, 4th IMEKO TC19 Symposium on Environmental Instrumentation and Measurements “Protecting Environment, Climate Changes and Pollution Control”, June 2013, Lecce, Italy;

**5.4.1.51** International Steering Committee Member, The 8th International Symposium on Advanced Topics in Electrical Engineering (ATEE 2013), May 2013, Bucharest;

**5.4.1.52** Technical Program Committee Member, 2013 IEEE International Instrumentation & Measurement Technology Conference - I2MTC, May 2013, The Depot, Minneapolis, MN, USA;

**5.4.1.53** Technical Program Committee Member, IEEE 11th International Multi-Conference on Systems, Signals & Devices (SSD'13), March 2013, Hammamet, Tunisia;

**5.4.1.54** Program Committee Member, 2012 International Conference and Exposition on Electrical and Power Engineering (IEEE EPE2012), October 2012, Iasi, Romania;

**5.4.1.55** International Programme Committee Member, XX IMEKO World Congress, September 2012, Busan, Republic of Korea;

**5.4.1.56** Scientific Committee Member, The 5th International Conference on

Advanced Concepts on Mechanical Engineering, June 2012, Iasi, Romania;

**5.4.1.57** Technical Program Committee Member, 2012 IEEE International Instrumentation & Measurement Technology Conference - I2MTC, May 2012, Graz, Austria;

**5.4.1.58** Technical Program Committee Member, IEEE 9<sup>th</sup> International Multi-Conference on Systems, Signals & Devices (SSD'12), March 2012, Chemnitz, Germany;

**5.4.1.59** Organising Committee, Joint IMEKO TC11 TC19 TC20 International Symposia Metrological Infrastructure Environmental and Energy Measurements, International Symposium of Energy Agencies of Mediterranean Countries, Mediterranean Industry of the Sun, June 2011, Dubrovnik Riviera, Cavtat, Croatia;

**5.4.1.60** Technical Program Committee Member, 2011 IEEE International Instrumentation & Measurement Technology Conference - I2MTC, May 2011, Binjiang, Hangzhou, P. R. China;

**5.4.1.61** Technical Program Committee Member, IEEE 8<sup>th</sup> International Multi-Conference on Systems, Signals & Devices (SSD'11), March 2011, Sousse, Tunisia;

**5.4.1.62** Technical Program Committee Member, IEEE Conference on Virtual Environments, Human-Computer Interfaces and Measurement Systems, VECIMS 2010, September 2010, Taranto, Italy;

**5.4.1.63** International Programme Committee Member, 17th Symposium IMEKO TC 4 - Measurement of Electrical Quantities, 15th International Workshop on ADC Modelling and Testing, 3rd Symposium IMEKO TC 19 - Environmental Measurements, "Instrumentation for the Information and Communication Technology Era", September 2010, Kosice, Slovakia;

**5.4.1.64** Technical Program Committee Member, IEEE 7th International Multi-Conference on Systems, Signals & Devices (SSD'10), June 2010,

Amman, Jordan;

- 5.4.1.65** Technical Program Committee Member, 2010 IEEE International Instrumentation & Measurement Technology Conference - I2MTC, May 2010, Austin, Texas, USA;
- 5.4.1.66** XIX IMEKO World Congress General Chairman, September 2009, Lisbon, Portugal;
- 5.4.1.67** Technical Program Committee Member, 2009 IEEE International Instrumentation & Measurement Technology Conference - I2MTC, May 2009, Singapore;
- 5.4.1.68** Program Committee Member, 2009 IEEE Workshop on Computational Intelligence in Virtual Environments, March-April 2009, Nashville, TN, USA;
- 5.4.1.69** Technical Program Committee, IEEE 6th International Multi-Conference on Systems, Signals and Devices, March 2009, Djerba, Tunisia;
- 5.4.1.70** International Conference on Metrology of Environmental, Food and Nutritional Measurements MEFNM 2008 Co-Chairman, September 2008, Budapest, Hungary;
- 5.4.1.71** International Program Committee Member, TC1-TC7 IMEKO Joint Symposium on "Man, Science & Measurement", September 2008, Annecy, France;
- 5.4.1.72** Technical Program Committee Member, 2008 IEEE International Instrumentation & Measurement Technology Conference - I2MTC, May 2008, Victoria, Canada;
- 5.4.1.73** International Program Committee Member, First International Symposium on Environmental Testing Engineering (ETE' 2007), November 2007, Brussels, Belgium;
- 5.4.1.74** International Programme Committee Chairman, 1st IMEKO TC19 Symposium, September 2007, Iasi, Romania;

- 5.4.1.75** Program Committee Member, IEEE Fourth International Multi-Conference on Systems, Signals & Devices (SSD'07), March 2007, Hammamet, Tunisia;
- 5.4.1.76** Technical Program Committee Member, IEEE Sensors 2006, October 2006, Daegu, South Korea;
- 5.4.1.77** International Programme Committee Member, IMEKO XVIII World Congress Metrology, Metrology for a Sustainable Development, September 2006, Rio de Janeiro, Brazil;
- 5.4.1.78** Technical Program Committee Member, IEEE Sensors 2005, October/November 2005, Irvine, California, USA;
- 5.4.1.79** International Program Committee Member, IMEKO TC1 and TC7 Symposium on Metrology and Measurement Applications in the Era of Internet Working, September 2005, Ilmenau, Germany;
- 5.4.1.80** International Program Committee Member, VII Conference on Advanced Mathematical and Computational Tools in Metrology, AMCTM 2005, June 2005, Lisbon, Portugal;
- 5.4.1.81** Technical Program Committee Member, IEEE Sensors 2004, October 2004, Wien, Austria;
- 5.4.1.82** Technical Program Committee Member, IEEE Sensors 2003, October 2003, Toronto, Canada;
- 5.4.1.83** Technical Programme Committee Member, The Eurosensors XVII Conference, September 2003, Guimarães, Portugal;
- 5.4.1.84** Technical Program Committee Member, IEEE Sensors 2002, June 2002, Orlando, Florida, USA;
- 5.4.1.85** National Organizing Committee Member, 11th International Symposium on Trends in Electrical Measurements and Instrumentation and the 6th Workshop on ADC Modelling and Testing, IMEKO TC-4, September 2001, Lisbon, Portugal;
- 5.4.1.86** Special Session WP6 - ADC Testing, International Conference on

Electronics, Circuits and Systems (ICECS'98) Organizer (with Prof. António Cruz Serra), September 1998, Lisbon, Portugal;

**5.4.1.87** Organizing Committee Member, 9th EAEEIE International Conference on Education in Electrical and Information Engineering -Enhancement of Education in Electrical and Information Engineering Through Industry Co-Operation and Research, May 1998, Lisbon, Portugal.

## **5.4.2 National or Mainly Regional**

**5.4.2.1** Organizing Commission Member, 7º Encontro Nacional da SPMET, Medições para os Transportes, Lisbon, November 2017;

**5.4.2.2** Organizing Commission Member, CONFMET2016, November 2016, Évora, Portugal;

**5.4.2.3** Technical Committee Member, 10ª Conferência de Telecomunicações (Conftele 2015), May 2015, Aveiro, Portugal;

**5.4.2.4** Organizing Commission Member, 6º Encontro Nacional da SPMET, Luz, Visão e IMAGEM - Medição e Inovação, Lisbon, March 2015;

**5.4.2.5** Organizing Commission Member, CONFMET2014, June 2014, Lisbon, Portugal;

**5.4.2.6** Technical Committee Member, 9ª Conferência de Telecomunicações (Conftele 2013), May 2013, Castelo Branco, Portugal;

**5.4.2.7** Organizing Commission Member, 5º Encontro Nacional da SPMET, Medir para a Segurança, November 2012, Coimbra, Portugal;

**5.4.2.8** Organizing Commission Member, 4º Encontro Nacional da SPMET, Metrologia Suporte da Competitividade na Indústria, Oeiras, November 2011;

**5.4.2.9** Organizing Commission Member, 3ª Conferência Nacional da Sociedade Portuguesa de Metrologia CONFMET2010, November 2010, Lisbon, Portugal;

**5.4.2.10** Organizing Commission Member, 3º Encontro Nacional da Sociedade Portuguesa de Metrologia, October 2008, Porto, Portugal;

- 5.4.2.11** Scientific Commission Member, Encontro Nacional sobre Instrumentação Científica e Metrologia Aplicadas à Engenharia Civil, Laboratório Nacional de Engenharia Civil, November 2007, Lisbon, Portugal;
- 5.4.2.12** Organizing Commission Member, 2ª Conferência Nacional Metrologia e Inovação, October 2007, Funchal, Madeira, Portugal;
- 5.4.2.13** Technical Committee Member, 6ª Conferência de Telecomunicações (Conftele 2007), May 2007, Peniche, Portugal;
- 5.4.2.14** Organizing Commission Member, 2º Encontro Nacional da Sociedade Portuguesa de Metrologia, November 2006, Lisbon, Portugal;
- 5.4.2.15** Organizing Commission Member, 1º Encontro Nacional da Sociedade Portuguesa de Metrologia, November 2004, Lisbon, Portugal;
- 5.4.2.16** Scientific Commission Member, Conferência Científica Tecnologia de Engenharia (CCTE 2002), May 2002, Lisbon, Portugal;
- 5.4.2.17** Organizing Commission Member, Congresso Nacional da Qualidade 2000, June 2000, Lisbon, Portugal;
- 5.4.2.18** International Steering Committee Member, International Conference on Electrical and Power Engineering (EPE'99), November 1999, Iasi, Romania;

## **5.5 Research/Project Evaluation**

### **5.5.1 Editorial Boards**

- 5.5.1.1** Special issue “Smart Wearable Sensors and Systems for Healthcare Monitoring”, Sensors, MDPI AG, Switzerland, 2021. Pedro Silva Girão, Octavian Postolache (Editors);
- 5.5.1.2** Metrology, (ISSN xxxx-3792), MDPI, Switzerland, since 2020;
- 5.5.1.3** Sensor Networks, Sensors (ISSN 1424-8220), MDPI, Switzerland, since 2019;
- 5.5.1.4** Special issue “Advanced Sensing Technologies for Environmental Monitoring and Biomedical Applications”, Sensors, MDPI AG, Switzerland, 2019. Pedro Silva Girão, Octavian Postolache, Sergio

Rapuano (Editors);

- 5.5.1.5** Special issue “Assistive Devices and Sensors”, Sensors, MDPI AG, Switzerland, 2019. Pedro Silva Girão, Octavian Postolache, Edward Sazonov (Editors);
- 5.5.1.6** IEEE I&M Video Tutorials Associate Editor, 2019;
- 5.5.1.7** Special issue "Tactile Sensors and Applications", Sensors, MDPI AG, Switzerland, 2018. Pedro Silva Girão, Pedro Pinto Ramos, Perla Maiolino (Editors);
- 5.5.1.8** IET Science, Measurement & Technology, Associate Editor, 2018-2025;
- 5.5.1.9** Special issue "Intelligent Sensing Technologies for Nondestructive Evaluation", Sensors, MDPI AG, Switzerland, 2017. Seunghee Park, Aimé Lay-Ekuakille, Octavian Postolache, Pedro Silva Girão (Editors);
- 5.5.1.10** International Journal of Electronics, Communications, and Measurement Engineering (IJECEME), former International Journal on Measurement Technologies and Instrumentation Engineering (IJMTIE), IRMA International, Associate Editor, since 2011;
- 5.5.1.11** Buletinul Institutului Politehnic din Iasi (Bulletin of the Polytechnic Institute of Iasi), since 2010;
- 5.5.1.12** International Journal of Computing & Information Technology (IJCIT), ISSN: 0974-696X, Serials Publications, India, since January 2009;
- 5.5.1.13** Sensors & Transducers Journal and Magazine, since July 2007;
- 5.5.1.14** Measurement, Elsevier, from November 2006 to 2017;
- 5.5.1.15** Transactions on Systems, Signals and Devices (TSSD), SHAKER-VERLAG (ISSN 1861-5252, Germany), November 2005;

## **5.5.2 Reviewer - Publications**

- 5.5.2.1** IEEE Transactions on Automation Science and Engineering, since January 2018;
- 5.5.2.2** Journal of Healthcare Engineering, Hindawi Publishing Corporation, since January 2018;
- 5.5.2.3** Nuclear Instruments and Methods in Physics Research, A, since January 2018;

- 5.5.2.4** IRBM - Innovation and Research in BioMedical Engineering, Elsevier, since 2017;
- 5.5.2.5** Early Human Development, Elsevier, since 2017;
- 5.5.2.6** Computer Methods and Programs in Biomedicine, Elsevier, since 2016;
- 5.5.2.7** Mathematical Problems in Engineering, Hindawi Publishing Corporation, since 2016;
- 5.5.2.8** Review of Scientific Instruments, AIP, since 2016;
- 5.5.2.9** Scientific Research and Essays, Academic Journals, since 2016;
- 5.5.2.10** Computers in Biology and Medicine, Elsevier, since 2016;
- 5.5.2.11** Pervasive and Mobile Computing, Elsevier, since September 2015;
- 5.5.2.12** Journal of Computational Methods in Sciences and Engineering, IOP Press, since January 2015;
- 5.5.2.13** Sensors and Actuators: A. Physical, Elsevier, since November 2014;
- 5.5.2.14** Journal of Zhejiang University-SCIENCE C: Computers & Electronics, since October 2014;
- 5.5.2.15** Journal of The Institution of Engineers (India), Series B, Springer, since May 2014;
- 5.5.2.16** IEEE Transactions on Biomedical Circuits and Systems, since April 2014;
- 5.5.2.17** Machines, ISSN 2075-1702, MDPI Publishing, Basel, Switzerland, since November 2013;
- 5.5.2.18** Journal of Environmental Informatics, ISSN 1726-2135, International Society for Environmental Information Sciences, since April 2013;
- 5.5.2.19** Instrumentation Science & Technology (Taylor & Francis), 1073-9149 (Print), 1525-6030 (Online), since December 2012;
- 5.5.2.20** Sensors (ISSN 1424-8220; CODEN: SENSC9), MDPI Publishing, Basel, Switzerland, since September 2012;
- 5.5.2.21** Herald Journal of Environmental and Health Science, since July 2012;
- 5.5.2.22** IEEE Sensors Journal, since May 2012;
- 5.5.2.23** IEEE Signal Processing Letters, since May 2012;
- 5.5.2.24** Ocean Engineering, Elsevier, since May 2012;

- 5.5.2.25** Optics and Laser Technology, Elsevier, since June 2010;
- 5.5.2.26** International Journal of Computing & Information Technology (IJCIT), ISSN: 2279-0764, Serials Publications, India, since January 2009;
- 5.5.2.27** Sensors and Actuators, B, Elsevier, since 2008;
- 5.5.2.28** Sensors & Transducers Journal, ISSN: 2306-8515, e-ISSN 1726-5479 since July 2006;
- 5.5.2.29** Measurement, Elsevier, since November 2005;
- 5.5.2.30** Advanced Mathematical and Computational Tools in Metrology VII, Series on Advances in Mathematics for Applied Sciences, World Scientific Publishing Co., 2005;
- 5.5.2.31** IEEE Transactions on Instrumentation and Measurement, since 1997;
- 5.5.2.32** Wiley Encyclopedia of Electrical and Electronics Engineering, since 1997;
- 5.5.2.33** Caderno do CEFAT, 1996-2000.

### **5.5.3 Reviewer - Conferences**

- 5.5.3.1** International Conference on Sensing and Instrumentation in IoT Era ISSI, August 2024, Azores, Portugal;
- 5.5.3.2** The 12th International Symposium on Advanced Topics in Electrical Engineering (ATEE 2021), March 2021, Bucharest, Romania;
- 5.5.3.3** 5<sup>th</sup> International Symposium on Intelligent Systems Technologies and Applications (ISTA'19), December, 2019, Trivandrum, Kerala, India;
- 5.5.3.4** The 11th International Symposium on Advanced Topics in Electrical Engineering (ATEE 2019), March 2019, Bucharest, Romania;
- 5.5.3.5** International Conference on Sensing and Instrumentation in IoT Era (ISSI'18), September 2018, Shanghai, P. R. China;
- 5.5.3.6** XXII IMEKO World Congress, September 2018, Belfast, Great Britain;
- 5.5.3.7** Smart Cities Symposium (SCS'18), April 2018, University of Bahrain, Kingdom of Bahrain;
- 5.5.3.8** 2017 Joint IMEKO TC1-TC7-TC13 Symposium: "Measurement Science Challenges in Natural and Social Sciences", July/August 2017,

Rio de Janeiro, Brazil;

- 5.5.3.9** 2017 IEEE International Instrumentation & Measurement Technology Conference - I2MTC, May 2017, Torino, Italy;
- 5.5.3.10** The 10th International Symposium on Advanced Topics in Electrical Engineering (ATEE 2017), March 2017, Bucharest, Romania;
- 5.5.3.11** 2016 International Conference and Exposition on Electrical and Power Engineering (EPE), October 20, 2016, Iasi, Romania;
- 5.5.3.12** International Symposium on Emerging Topics in Circuits and Systems (SET-CAS'16), September 2016, Jaipur, India;
- 5.5.3.13** Second International Symposium on Intelligent Systems Technologies and Applications (ISTA'16), September 21-24, 2016, Jaipur, India;
- 5.5.3.14** 21st IMEKO TC4 Symposium on Measurements of Electrical Quantities (together with 19th TC4 International Workshop on ADC and DCA Modeling and Testing, IWADC), September 2016, Budapest, Hungary;
- 5.5.3.15** 2016 International Symposium on INnovations in Intelligent Systems and Applications (INISTA'16), August 2016, Sinaia, Romania;
- 5.5.3.16** 2016 IEEE International Instrumentation & Measurement Technology Conference - I2MTC, May 2016, Taipei, Taiwan;
- 5.5.3.17** IEEE International Symposium on Medical Measurements and Applications – MeMeA, May 2016, Benevento, Italy; |
- 5.5.3.18** International Symposium on Emerging Topics in Circuits and Systems (SET-CAS'15), August 2015, Kerala, India;
- 5.5.3.19** 2015 International Conference on Smart Sensors and Application (ICSSA2015), May 2015, Kuala Lumpur Malaysia;
- 5.5.3.20** The 9th International Symposium on Advanced Topics in Electrical Engineering (ATEE), May 2015, Bucharest, Romania;
- 5.5.3.21** 2015 IEEE International Instrumentation & Measurement Technology Conference - I2MTC, May 2015, Pisa, Italy;
- 5.5.3.22** IEEE SPICES 2015, IEEE International Conference on Signal

- Processing, Informatics, Communication and Energy Systems, February 2015, Kerala, India;
- 5.5.3.23** 2014 IEEE International Instrumentation & Measurement Technology Conference - I2MTC, May 2014, Montevideo, Uruguay;
- 5.5.3.24** 11<sup>th</sup> International Multi-Conference on Systems, Signals & Devices (SSD'14), February 2014, Casteldefells, Spain;
- 5.5.3.25** 2013 IEEE International Conference on Smart Instrumentation, Measurement and Applications (ICSIMA 2013), November 2013, Kuala Lumpur, Malaysia;
- 5.5.3.26** 2013 International Workshop on Impedance Spectroscopy (IWIS 2013), 25-27 September, 2013, Chemnitz, Germany;
- 5.5.3.27** 19th IMEKO TC-4 Symposium on Measurements of Electrical Quantities, 17th TC-4 Workshop IWADC on ADC and DAC Modeling and Testing, Barcelona, Spain, 18-19, July 2013;
- 5.5.3.28** 2013 IEEE International Conference on Computational Intelligence and Virtual Environment for Measurement Systems and Applications (IEEE CIVEMSA 2013), July 2013, Milan, Italy;
- 5.5.3.29** 2013 IEEE International Instrumentation & Measurement Technology Conference - I2MTC, May 2013, Minneapolis, USA;
- 5.5.3.30** XX IMEKO World Congress, September 2012, Busan, Republic of Korea;
- 5.5.3.31** 2012 IEEE International Instrumentation & Measurement Technology Conference - I2MTC, May 2012, Graz, Austria;
- 5.5.3.32** 9<sup>th</sup> International Multi-Conference on Systems, Signals & Devices (SSD'12), March 2012, Chemnitz, Germany;
- 5.5.3.33** 2011 IEEE International Instrumentation & Measurement Technology Conference - I2MTC, May 2011, Binjiang, Hangzhou, P. R. China;
- 5.5.3.34** 8th International Multi-Conference on Systems, Signals & Devices (SSD'11), March 2011, Sousse, Tunisia;

- 5.5.3.35** 17<sup>th</sup> Symposium IMEKO TC 4 - Measurement of Electrical Quantities, 15th International Workshop on ADC Modelling and Testing, 3rd Symposium IMEKO TC 19 - Environmental Measurements, "Instrumentation for the Information and Communication Technology Era", Kosice, Slovakia, September 8 - 10, 2010;
- 5.5.3.36** 2010 IEEE International Instrumentation and Measurement Technology Conference, May 2010, Austin, Texas, USA;
- 5.5.3.37** XIX IMEKO World Congress, September 2009, Lisbon, Portugal;
- 5.5.3.38** 2009 IEEE International Instrumentation and Measurement Technology Conference, May 2009, Singapore;
- 5.5.3.39** 2009 IEEE Workshop on Computational Intelligence in Virtual Environments, March-April 2009, Nashville, TN, USA;
- 5.5.3.40** International Conference on Metrology of Environmental, Food and Nutritional Measurements MEFNM 2008, September 2008, Budapest, Hungary;
- 5.5.3.41** 2008 IEEE International Instrumentation and Measurement Technology Conference, May 2008, Victoria, Vancouver Island, British Columbia, Canada;
- 5.5.3.42** 1st IMEKO TC19 Symposium, Iasi, Romania, September 2007;
- 5.5.3.43** Conftele 2007, May 2007, Peniche, Portugal;
- 5.5.3.44** IEEE Instrumentation and Measurement Technology Conference 2007, May 2007, Warsaw, Poland;
- 5.5.3.45** IEEE Sensors 2006, October 2006, Daegu, South Korea;
- 5.5.3.46** IMEKO XVIII World Congress, September 2006, Rio de Janeiro, Brazil;
- 5.5.3.47** IEEE Sensors 2005, October/November 2005, Irvine, CA, USA;
- 5.5.3.48** 14th TC4 Symposium of IMEKO, September 2005, Gdynia, Poland;
- 5.5.3.49** IEEE Instrumentation and Measurement Technology Conference 2005, May 2005, Ottawa, Canada;

- 5.5.3.50** Conftele 2005, April 2005, Tomar, Portugal;
- 5.5.3.51** IEEE Sensors 2004, October 2004, Wien, Austria;
- 5.5.3.52** IEEE Sensors 2003, October 2003, Toronto, Canada;
- 5.5.3.53** Eurosensors XVII, September 2003, Guimarães, Portugal;
- 5.5.3.54** XVII IMEKO World Congress, June 2003, Dubrovnik, Croatia;
- 5.5.3.55** Conftele 2003, June 2003, Aveiro, Portugal;
- 5.5.3.56** The First IEEE International Conference on Sensors, IEEE Sensors 2002, June 2002, Orlando, Florida, USA;
- 5.5.3.57** Conferência Científica Tecnologia de Engenharia - O Saber do Passado, O Desafio do Futuro - (CCTE 2002), May 2002, Lisbon, Portugal;
- 5.5.3.58** 11th International Symposium on Trends in Electrical Measurements and Instrumentation and the 6th Workshop on ADC Modelling and Testing, IMEKO TC-4, September 2001, Lisbon, Portugal;
- 5.5.3.59** 5th International Workshop on "ADC Modelling and Testing", IWADC'2000, September 2000, Wien, Austria;

#### **5.5.4 Projects/Institutions**

- 5.5.4.1** Project Peer Reviewer of the Science Fund of the Republic of Serbia, 2020-2022;
- 5.5.4.2** Member of the Expert Panel: Engineering and Technology (Panel E), in the 'Research Assessment Exercise in Latvia', October-November 2020;
- 5.5.4.3** IT internal projects evaluation, 2019:
  - DeToxSTM - Denoise Toolbox for Scanning Tunnelling Microscopy Images (FCT – 60 000€)
  - QuNet - Quantum Telecommunication Networks (IT – 58 400€)
  - RAPID - RF IC Design Automation (IT – 60 000€)
  - uFlexBatt - Batteryless energy supply system based on flexible organic photovoltaic cells (IT – 52 420€)

- 5.5.4.4** Fundação para a Ciência e a Tecnologia (FCT), expert evaluator, 2016;
- 5.5.4.5** Expert for Horizon 2020 Advisory Groups, European Commission, 2013;
- 5.5.4.6** Evaluator, as an expert on Electrical Engineering, of the Strategic Project “Doctorate in Universities of Excellence – Research Assessment and Support for Scientific Publishing”, coordinated by The Romanian National University Research Council and by the Executive Agency for Higher Education and Research Funding, Romania, September 2011;
- 5.5.4.7** European Commission External Expert for Evaluation and Assessment of Proposals and Projects in FP7, 2007 - 2013;
- 5.5.4.8** Agência de Inovação (AdI), SA, independent expert, since November 2003;
- 5.5.4.9** European Commission External Expert for Evaluation and Assessment of Proposals and Projects in FP5 RTD Programmes, 1998 - 2002;

## **6. AUDITS AND SERVICES TO THE SCIENTIFIC AND INDUSTRIAL COMUNITIES**

### **6.1 Quality audits of calibration and testing laboratories for the Instituto Português da Qualidade**

- CPR-Marconi laboratories, July 1990, May 1994, December 1995, November 1996, September 1997, and September 1998;
- Laboratório Industrial da Qualidade (LIQ) laboratories, March 1995, May 1996, June 1997, May 1998, June 1999, and December 1999;
- Instituto Electrotécnico Português (IEP) laboratories, November 1995, December 1996, December 1997, October 1998, November 1999, November 2000, January 2005, and January 2006;
- Instituto das Comunicações de Portugal Radioelectric Metrology Laboratory, December 1997, and March 1999;

- LABELEC tests laboratory, September 1998, September 1999, September 2000, and November 2001;
  - Portugal Telecom Inovação laboratories, February 2001, and December 2004;
  - LABELEC Equipment for Work under Voltage Test Laboratory (LETET), April 2003, and July 2004;
  - Siemens High-Voltage Laboratory, June 2004.
- 6.2** Member of the jury of Apoio a Atividades dos Docentes, Investigadores e Pessoal não Docente da UTL, 2012 and 2013.
- 6.3** Member of the jury of Prémio de Excelência – Sistema Português da Qualidade (PEX-SPQ), 2013.
- 6.4** Member of the jury of Prémio Inovação Jovem Engenheiro 2010, Ordem dos Engenheiros, June 2011.
- 6.5** Consultant of Centro Hospitalar de Lisboa Oeste (C.H.L.O.) for acquisition and maintenance of medical equipment of the hospitals of the C.H.L.O. (S. Francisco Xavier, Egas Moniz e Santa Cruz), 2007-2008.
- 6.6** Reviewer of the report of European project DYNAD, November 1999 and February 2001.
- 6.7** Reviewer of IEEE 1241, "Standard for Terminology and Test Methods for Analog-to-Digital Converters" as a member of IMEKO TC-4 Working Group on A/D and D/A Converter Metrology - Project EUPAS, March 1999.
- 6.8** Consultant of PEDIP II for funding of electromagnetic compatibility testing structures, in 1996.
- 6.9** MPS EF3 flux meter testing, June 1995, commissioned by Sistel.
- 6.10** Consultant for Instituto Português da Qualidade in the acquisition of an immunity to radiated electromagnetic fields testing system, International Public Tender N°8/IPQ/94-.
- 6.11** Expert for European Union Contest for Young Scientists, September 1994 and 1996.
- 6.12** Design and implementation of stand-alone personal computer based system for the automation of pavement deformation measurement using a Benkelman beam, 1992/93,

commissioned by Prof. Paulo Pereira (Universidade do Minho).

- 6.13** Measurement of the electric resistivity of rubber-cork samples, June 1992, commissioned by Soberana Corticeira.
- 6.14** Measurement of the dielectric constant of cork agglomerate, July 1990, commissioned by CTCOR-Centro Tecnológico da Cortiça.
- 6.15** Evaluation of the anti-static characteristics of STATCONTROL using TECHNOTREND SRM 30 and MEGGER instruments, January 1990, commissioned by Inacqua Limitada. Industria Química.
- 6.16** Design and implementation of an interface between a COMARK 6800 digital thermometer and a PANASONIC KP-1081 printer, September 1989, commissioned by Professor Fátima Farelo, DEQ/IST.
- 6.17** Measurement of the resistance of insulators Pegulan-Artos and Vinilete-Endutex according to standard DIN 51953 for the Portuguese national archive of Torre do Tombo, June 1989, commissioned by Eng. Almeida d'Eça.
- 6.18** Measurement of the resistivity of samples of conductive alloys, December 1989, commissioned by Doctor Mário Ferreira.
- 6.19** Support to Eng. Augusto Gomes (DEC/IST) in "Ensaio Experimental de um Pilar sob Acções Alternadas", Relatório CMEST EP26/89 and later in his PhD. experimental work.
- 6.20** Member of the Direcção Geral do Ensino Superior - Ministério da Educação – that evaluated the acquisition of equipment for the installation of Institutos Politécnicos de Faro and Setúbal laboratories.
- 6.21** Member of the Direcção Geral do Ensino Superior - Ministério da Educação – Commission that evaluated World Bank funded Instituto Superior Técnico re-equipment.

## **7. COOPERATION WITH OTHER SCHOOLS, NAMELY FROM PORTUGUESE SPEAKING COUNTRIES**

- 7.1** Visiting Professor, L.N. Gumilyov Eurasian National University, Nur-Sultan, Kazakhstan, September-December 2020. Courses lectured: Lean Production and Quality Control of Goods and Services for students of the BSc. program 6B07532 - "Standardization and

Certification".

**7.2** Collaboration with Centro de Electrónica Industrial da Universidade Eduardo Mondlane, Agreement ICCTI/UEM (Project 423 UEM).

**7.3** Design of programs for training activities, República Popular de Angola, May 1995:

- Curso de Actualização em Sistemas de Medição Automatizada: Normas para Comunicação entre Sistemas;
- Curso de Actualização em Qualidade: Qualidade e Normas;
- Curso de Formação em Medidas em Radiofrequência;
- Curso Técnico de Actualização em Sensores, Transdutores e Actuadores Industriais;
- Curso Técnico de Actualização para Técnicos de Laboratório: Manutenção de Equipamento Electrónico;
- Curso Técnico de Actualização em Sistemas de Medida Automatizada: Instrumentação Suportada em Computadores Pessoais;
- Seminário: Compatibilidade Electromagnética.

**7.4** Preparation of a proposal/project for BSc. in Electrotechnical and Mechanics, 1992, Instituto Superior de Tecnologia (ISTec), Cape Verde.

**7.5** Collaboration, since 1992, with Departamento de Engenharia Electrotécnica da Universidade Eduardo Mondlane - Maputo, Mozambique – namely in the training of Electrical Measurements teaching staff.

**7.6** Collaboration, since 1990, with Departamento de Engenharia Electrotécnica da Universidade Agostinho Neto - Luanda, Angola - namely in the training of Electrical Measurements teaching staff.

**7.7** Design of the programs, bibliography and laboratories for Instrumentation and Measurements I e II and Circuit Analysis, Faculdade de Engenharia da Universidade da Ásia Oriental - Macau -, in 1989.

## **8. MANAGEMENT POSITIONS, AFFILIATIONS, AND DISTINCTIONS**

### **8.1 Current**

**8.1.1** Deputy Dean of ULisboa School, Shanghai University, January 2023 – December 2025.

- 8.1.2** Member of the Economic Council for Portugal-China Internationalization, former Portugal-China Economic and Advisory Board, Shanghai.
- 8.1.3** World Top 2% Scientists (Career Impact) (1960-2021/22/23), Stanford University, <https://elsevier.digitalcommonsdata.com/datasets/btchxktzyw/4>
- 8.1.4** Fellow of The Institution of Engineering and Technology (IET), since July 2018;
- 8.1.5** Member of the Fórum da Qualidade, since its foundation in July 2018;
- 8.1.6** Chief Advisor of the International Association for Promotion of Healthcare and Life-Science Research (IAPHLSR), since June 2017;
- 8.1.7** Member of the Executive Council of the Asian Society for Research in Engineering Sciences (ASRES), since March 2017;
- 8.1.8** IEEE Instrumentation and Measurement Society. Certificate of Appreciation as TC-15 Virtual Systems in Measurement member. February 2017;
- 8.1.9** Co-Chair IEEE Instrumentation and Measurement Portugal Chapter, January 2016 to June 2004; Chair since July 2024;
- 8.1.10** Advisory Board Member, IMEKO, since September 2012;
- 8.1.11** Doctor Honoris Causa, Faculty of Electrical Engineering, Technical University “Gheorghe Asachi”, Iasi, Romania, since April 2009;
- 8.1.12** Member of IEEE Instrumentation and Measurement Society TC25 Medical and Biological Measurements - Subcommittee on Blood Pressure Measurement, since July 2008;
- 8.1.13** IMEKO Technical Committee on Environmental Measurement (TC-19) Honorary Chairman;
- 8.1.14** President of Maria Inês de Menezes Vaz de Sampaio Foundation, (<http://www.fundacaomimvs.lx.it.pt/entrada/index.htm>), since 2010;
- 8.1.15** Founding Member (2017) and President of the General Assembly of Sociedade Portuguesa de Instrumentação Médica (SPInstrumédica), since May 2017;
- 8.1.16** Founding Member (2002), Vice-president (2006-2019) and President of the General Assembly (2019-) of Sociedade Portuguesa de Metrologia (SPMet);

- 8.1.17** Member of Sociedade Brasileira de Metrologia (SBM), since 2001;
- 8.1.18** IEEE - Institute of Electrical and Electronics Engineers - Senior Member, since January 2001;
- 8.1.19** IMEKO Technical Committee on Education and Training in Measurement and Instrumentation (TC-1) Member, since December 2000;
- 8.1.20** Member of Ordem dos Engenheiros, since 1983; Senior Member (2012); Conselheiro (2012).

## **8.2 Past**

### **8.2.1 Instituto de Telecomunicações:**

- Instrumentation and Measurements Group Coordinator, since October 2000 until July 2023;
- Research Groups Coordinating Commission member;

**8.2.2** Coordinator of the BSc. on Electronics, IST, from September 2016 to March 2022;

**8.2.3** President of ADIST - Associação para o Desenvolvimento do IST (Association for the Development of Instituto Superior Técnico) Fiscal Board, from March 2016 to March 2022;

**8.2.4** Coordinator of the Electronics Scientific Area, DEEC/IST, September 2016 to September 2020;

**8.2.5** Basic Sciences and Enabling Technologies Scientific Area Coordinator (with Prof. Luís Alcácer/Prof. Jorge Morgado), from November 2005 to November 2020;

**8.2.6** IEEE Instrumentation and Measurement Society Distinguished Lecturer, 2015-2018;

**8.2.7** Member of IST/UL School Assembly, from 2012 to March 2022;

**8.2.8** Member of the Safety Commission of the Portuguese Research Reactor, from June 2012 to its extinction in 2017;

**8.2.9** Member of the General Assembly of IST-ID representing ADIST, March 2011 to March 2016;

**8.2.10** Member of the Admission and Qualification Council of the Ordem dos Engenheiros, from February 2010 to April 2016;

- 8.2.11** Member of the Direction and of the General Assembly of ADIST - Associação para o Desenvolvimento do IST (Association for the Development of Instituto Superior Técnico), representing the IST, from July 2009 to March 2016;
- 8.2.12** Member of the Advisory Board of QSCB – Quality Systems Certification Bureau – Certificação de Sistemas ISO, Lda, October 2003 –January 2016;
- 8.2.13** Member of the Executive Committee (Procurement and Contracts Committee, later) of Fusion for Energy, from June 2009 to December 2013;
- 8.2.14** Vice-president of ADIST - Associação para o Desenvolvimento do IST (Association for the Development of Instituto Superior Técnico), from May 2008 to July 2009;
- 8.2.15** Vice-president of CPIN – Centro Promotor de Inovação e Negócios (Centre for Innovation and Businesses Promotion), from July 2008 until its extinction in 2014;
- 8.2.16** Member of FUNDEC – Associação para a Formação e o Desenvolvimento em Engenharia Civil e Arquitectura (Association for Training and Development in Civil Engineering and Architecture) Fiscal Board, from February 2008 to July 2009;
- 8.2.17** Member of the General Council of INESC-ID Lisboa – Instituto de Engenharia de Sistemas e Computadores Investigação e Desenvolvimento (Institute of Systems and Computer Engineering Research and Development), from February 2008 to July 2009;
- 8.2.18** Member of ISR – Instituto de Sistemas e Robótica (Institute for Systems and Robotics) Fiscal Board, from 2006 to 2009;
- 8.2.19** IMEKO Vice-president, in charge of XIX IMEKO World Congress organization, October 2006 to September 2009;
- 8.2.20** IEC TC 85 WG 16 member, from September 2001 to September 2004;
- 8.2.21** Portuguese Delegate to the Standards, Measurements and Testing Program of the 4<sup>th</sup> EC Framework Program, from 1994 to 1998;
- 8.2.22** Instituto Superior Técnico (IST):
- President for Administrative Affairs of Instituto Superior Técnico, from

February 2008 to July 2009;

- Member of the Management Commission of the Integrated MSc. Degree in Biomedical Engineering, IST, from November 2004 to 2008;
- Senator of the Scientific Council, June 1993 to October 1998 and from 2001 to 2003;
- Member of the Coordinating Commission of the Scientific Council, from January 2003 to October 2004;
- Member of the Coordinating Commission of the Pedagogical Council, February 1996 to October 1998;
- Effective Member of Assembleia de Representantes in 1979;

#### **8.2.23 Department of Electrical and Computer Engineering/IST:**

- Dean of the Department of Electrical and Computer Engineering, Instituto Superior Técnico, Technical University of Lisbon (UTL), from April 2010 to January 2013;
- Coordinator of Post-Graduation in Electrical and Computer Engineering/IST, from October 2006 to 2008;
- Deputy Dean for Research and Development, January 2003 to August 2004;
- Elected Member of Research and Development Council, October 2000 until its extinction in December 2004;
- Licenciatura in Electrical and Computer Engineering Self-Assessment Commission, July 2000 to March 2001;
- Coordinator of Licenciatura em Engenharia Electrotécnica e de Computadores/IST, February 1996 to October 1998;
- Master Degree in Electrical and Computer Engineering Coordinator, July to November 1991;
- Member of the Executive Commission, October 1990 to October 1992;
- Master Degree Scientific Commission Member, Coordinator of the

Instrumentation and Measurements Branch, June 1988 to October 1992;

**8.2.24** Section of Electrotecnia Teórica e Medidas Eléctricas:

- Coordinator, October 1988 to October 1990;
- Member of the Directive Board, since 1976 until the extinction of the Section in 2004;

**8.2.25** New Engineering Courses Design and Installation:

- Founder of specialization in Instrumentation and Electrical Measurements in the Master Degree Program in Electrical Engineering, 1988;
- Member of Licenciatura in Biomolecular and Nanosystems Engineering Design and Installation Commission, 2003/2004;
- Member of Comissão Curricular (Design and Installation Commission) of Licenciatura in Electronics Engineering, 2001/02;
- Member of the Coordinating Commission of Licenciatura in Engineering and Industrial Management, February to October 1991;
- Membro da Comissão Curricular (Design and Installation Commission) of Licenciatura in Engineering of the Environment, 1991/92;
- Membro da Comissão Curricular (Design and Installation Commission) of Licenciatura in Engineering and Industrial Management (LEGI/IST), Coordinator of the Global Management Branch, 1989/90);

**8.2.26** Instituto da Energia – INTERG- Executive Director, from 1990 to 1998;

**8.2.27** RELACRE's IMEKO Committee Member, since October 1997 to its extinction in 2002;

**8.2.28** Representative, since January 1993, of Instituto Superior Técnico in the Sectoral Commission for Electrotechnics CS-01 of National Council for Quality. Vice-president since May 1999 to its extinction.

## 9. PUBLICATIONS

### 9.1 Papers Published and Submitted for Publication to Peer-reviewed Journals

#### International Publications

- 9.1.1** J.L. Correia da Mata, J.M.N.A. Fareleira, P.M.B.S. Girão, and W.A. Wakeham  
“Vibrating-Wire Techniques: Part 1: The Measurement of Viscosity”.  
International Journal of Thermophysics. Submitted for publication.
- 9.1.2** Ling Chen, Wei Ding, Yiyang Hu, Songling Wu, Pedro Silva Girão, Chao Yang,  
Yong Wang  
“Understanding Trade-Off Between Zincophilicity and Hydrogen-Evolution:  
Toward Ultra-Stable Aqueous Zinc Metal Batteries”, Advanced Energy Materials,  
pp. 1-10, May 2026: e71056.
- 9.1.3** Muhammad Ahsan Waseem, Junaid Aslam, Weiwei Sun, Yifan Zhang, Pedro  
Silva Girão, Yong Wang  
“Green Energy Storage: Biomass-Derived Electrodes for Sustainable Aqueous  
Zinc-Ion Batteries”, ChemSusChem, Vol. 19, Issue 8, pp. 1-34, April 2026.
- 9.1.4** P. Ferreira, F.O. Oliveira, R. Parafita, P.L. Correia, P.M. Girão, D.C. Costa  
“An Optimized Methodology for Patient-Specific Therapeutic Activity  
Administration in Liver Radioembolization”, Applied Sciences (Switzerland),  
Vol. 12, No. 22, 11669 (17 pages), November, 2022.
- 9.1.5** V. Viegas, J. M. Dias Pereira, P.M. Girão, O. Postolache  
“Remembering Old Practices to Validate Measurement Data”, IEEE  
Instrumentation and Measurement Magazine”, Vol. 25, No. 7, pp. 7 - 13, October,  
2022.
- 9.1.6** Vítor Viegas, J. M. Dias Pereira, Pedro Girão, Octavian Postolache  
“Study of latencies in ThingSpeak”, Advances in Science, Technology and  
Engineering Systems Journal, Vol. 6, No. 1, pp. 342-348, 2021.
- 9.1.7** Paulo Ferreira, Francisco P. M. Oliveira, Rui Parafita, Pedro S. Girão, Paulo L.

Correia, Oriol Pares and Durval C. Costa

“Voxel-Based Computational Tools Help Liver Dosimetry Calculations of Multiple (External and Internal) Radiation Therapies”, In: Tavares, J., Natal Jorge, R. (eds) VipIMAGE 2019. VipIMAGE 2019. Lecture Notes in Computational Vision and Biomechanics, vol 34. Springer, Cham., 2019.

- 9.1.8** Aimé Lay-Ekuakille, Ivana Durickovic, Anna Lucia Lanzolla, Rosario Morello, Claudio De Capua, Pedro S. Girão, Octavian Postolache, Alessandro Massaro, Leo Van Biesen  
“Effluents, Surface and Subterranean Waters Monitoring: Review and Advances”. Measurement: Journal of the International Measurement Confederation, Vol. 137, No. 1, pp. 566 - 579, April, 2019.
- 9.1.9** Vítor Viegas, José Miguel Dias Pereira, Octavian Postolache, Pedro Silva Girão  
“Application of force and inertial sensors to monitor gait on legacy walkers”, Acta IMEKO Vol 7, No 4, pp. 33-41, December, 2018.
- 9.1.10** P. Ferreira, F.O. Oliveira, R. Parafita, P.M. Girão, P.L. Correia, D.C. Costa  
“Patient-specific gamma-index analysis to evaluate 99mTc-MAA as a predictor for 90Y glass microspheres liver radioembolization dosimetry”, Computer Methods in Biomechanics and Biomedical Engineering: Imaging & Visualization, pp. 1 - 7, August, 2018.
- 9.1.11** V. Viegas, J. M. Dias Pereira, O. Postolache, P.M. Girão  
“Monitoring Walker Assistive Devices: A Novel Approach Based on Load Cells and Optical Distance Measurements”, MDPI Sensors, Vol. 18, No. 2, pp. 540 - 540, February, 2018.
- 9.1.12** V. Viegas, O. A. Postolache, P.M.B.S. Girão, J.M. Dias Pereira  
“Quimera: The easy way to simulate Foundation Fieldbus applications”, Computer Applications in Engineering Education, Vol. 24, Issue 6, pp. 914-925, November, 2016.
- 9.1.13** Paulo Ferreira, Rui Parafita, Ana Canudo, Carla Oliveira, Luís Rosa, Pedro Girão, Durval C. Costa

“Optimization of activity and absorbed doses calculation to target/tumor and normal liver volumes in patients submitted to yttrium-90 radioembolization with glass microspheres”, *Physica Medica: European Journal of Medical Physics*, Volume 32, Supplement 3, September, 2016.

**9.1.14** Paulo Ferreira, Rui Parafita, Ana Canudo, Carla Oliveira, Luís Rosa, Pedro Girão, Durval C. Costa

“Multiple Liver Metastases from Carcinoma of the Thymus Treated with Yttrium-90 Radioembolization (Glass Microspheres): Clinical Dosimetry and Outcome”, *Clinics in Oncology*, Vol. 1, No. 1024, pp. 1 - 5, June, 2016.

**9.1.15** P.M. Ramos, F.M. Janeiro, P.M. Girão

“Uncertainty evaluation of multivariate quantities: A case study on electrical impedance”, *Measurement*, Vol. 78, No. 1, pp. 397 - 411, January 2016.

**9.1.16** R. Queirós, F.C. Alegria, P.S. Girão, A.C. Serra

“A multi-frequency method for ultrasonic ranging”, *ULTRASONICS*, Volume: 63, pp. 86-93, December, 2015.

**9.1.17** O. Postolache, J.M. Dias Pereira, V. Viegas, L.P. Pedro, P.M. Girão, R.O. Oliveira, G. Postolache

“Smart Walker Solutions for Physical Rehabilitation”, *IEEE Instrumentation and Measurement Magazine*, Vol. 18, No. 5, pp. 21 - 30, October 2015.

**9.1.18** J.M.D. Pereira, O. Postolache, P.S. Girão

“Using neural network techniques in environmental sensing and measurement systems to compensate for the effects of influence quantities”, *IEEE Instrumentation & Measurement Magazine*, pp. 26 – 56, December 2014.

**9.1.19** Octavian Postolache, José Dias Pereira, Pedro Silva Girão

“Wireless sensor network-based solution for environmental monitoring: water quality assessment case study”, *IET Science, Measurement and Technology*, pp. 1-7, June 2014.

**9.1.20** M.L. Martínez, F.X. Martínez-Farré, O. Casas; M. Quilez; G. Hornero, P.M. Ramos, B. Borges, H.S. Marques, P.M. Girão, et. al.

"Intelligent composting assisted by a wireless sensing network", Waste Management, Vol. 34, No. TBD, pp. TBD - TBD, April, 2014.

**9.1.21** Oscar Casas, Marga López, Marco Quilez, Xavier Martinez-Farré, Gemma Hornero, Carlos Rovira, Mirta R. Pinilla, Pedro M. Ramos, Beatriz Borges, Hugo Marques, Pedro Silva Girão

"Wireless Sensor Network for Smart Composting Monitoring and Control", Measurement, Vol. 47, No. 1, pp. 483 - 495, January, 2014.

**9.1.22** F. Cary, O. Postolache, P.M. Girão

"Kinect Based System and Serious Game Motivating Approach for Physiotherapy Assessment and Remote Session Monitoring", International Journal on Smart Sensing and Intelligent Systems, Vol. 7, Issue 5, pp 1-6, January 2014.

**9.1.23** J.M. Dias Pereira, Vítor Viegas, Octavian Postolache, Pedro Silva Girão

"A Smart and Distributed Measurement System to Acquire and Analyze Mechanical Motion Parameters", Metrology and Measurement Systems, Vol. XX (2013), No. 3, pp. 465-478.

**9.1.24** E.C. Pinheiro, O. Postolache, P.M. Girão

"Contactless Impedance Cardiography Using Embedded Sensors", Measurement Science Review, Vol. 9, No. 3, pp. 157-164, June, 2013.

**9.1.25** O. Postolache, P.M. Girão, G. Postolache

"Method for Unobtrusive Measurement of Indoor Air Effects on the Cardio-Respiratory Function", Environmental Engineering and Management Journal, Vol. 12, No. 6, pp. 1239 - 1254, June, 2013.

**9.1.26** Pedro Silva Girão, Pedro Miguel Pinto Ramos, Octavian Postolache, José Miguel Dias Pereira

"Tactile Sensors for Robotic Applications", Measurement, Vol. 46, Issue 3, pp. 1257–1271, May 2013.

**9.1.27** E.C. Pinheiro, O. Postolache, P.M. Girão

"Study on ballistocardiogram acquisition in a moving wheelchair with embedded sensors", Metrology and Measurement Systems, Vol. XIX (2012), No. 4, pp. 739-

750.

- 9.1.28** J.M. Dias Pereira, O. Postolache, and P. Silva Girão  
“Heavy Metals Measurement: A Suitable Solution to Improve Online Measurement Celerity”, *Instrumentation Science and Technology*, Vol. 40, Issue 4, pp. 355-371, June, 2012.
- 9.1.29** José Miguel Dias Pereira, Octavian Postolache, Pedro Silva Girão  
“Using a Segmented Voltage Sweep Mode and a Gaussian Curve Fitting Method to Improve Heavy Metal Measurement System Performance”, *Metrology and Measurement Systems*, Vol. XIX (2012), No. 2, pp. 381-394.
- 9.1.30** E. Pinheiro, O. Postolache, P. Girão  
“Empirical Mode Decomposition and Principal Component Analysis implementation in processing non-invasive cardiovascular signals”, *Measurement*, Vol. 45, Issue 2, pp. 175-181, February 2012.
- 9.1.31** O. Postolache, P.M. Girão, G. Postolache  
"Seismocardiogram and Ballistocardiogram Sensing", *International Journal of Measurement Technologies and Instrumentation Engineering (IJMTIE)*, Vol. 1, No. 3, pp. 67 - 88, December, 2011.
- 9.1.32** Miguel Dias Pereira, Octavian Postolache, Pedro Silva Girão  
“A Smart Measurement and Stimulation System to Analyze and Promote Non-Nutritive Sucking of Premature Babies”, *Measurement Science Review*, Vol. 11, No. 6, pp. 173-180, October 2011.
- 9.1.33** O. Postolache, P.M. Girão, J.M. Dias Pereira, G. Postolache  
“FM-CW radar sensors for vital signs and motor activity monitoring”, *ICST Trans. on Ambient Systems*, Vol. 11, Issues 10-12, pp. 1-10, October-December, 2011.
- 9.1.34** O. Postolache, J.M. Dias Pereira, P.M. Girão  
“Multi-sensing node architecture for water quality monitoring”, *Instrumentation Viewpoint*, No. 11, pp. 66 - 67, September, 2011.

- 9.1.35** E.C. Pinheiro, O. Postolache, P.M. Girão  
"A Survey on Unobtrusive Measurements of the Cardiovascular Function and their Practical Implementation in Wheelchairs", *Sensors & Transducers Magazine*, Vol. 9, No. 12, pp. 182 - 199, December, 2010.
- 9.1.36** R. Queirós, F. Alegria, P.M. Girão, A.C. Serra  
"Cross-Correlation and Sine-Fitting Techniques for High Resolution Ultrasonic Ranging", *IEEE Transactions on Instrumentation and Measurement*, Vol. 59, No. 12, pp. 3227 - 3236, December, 2010.
- 9.1.37** E.C. Pinheiro, O. Postolache, P.M. Girão  
"Non-Intrusive Device for Real-Time Circulatory System Assessment with Advanced Signal Processing Capabilities", *Measurement Science Review*, Vol. 10, No. 5, pp. 166 - 175, October, 2010.
- 9.1.38** O. Postolache, P.M. Girão, J. Mendes, E.C. Pinheiro, G. Postolache  
"Physiological Parameters Measurement Based on Wheelchair Embedded Sensors and Advanced Signal Processing", *IEEE Transactions on Instrumentation and Measurement*, Vol. 59, No. 10, pp. 2564 - 2574, October 2010.
- 9.1.39** E.C. Pinheiro, O. Postolache, P.M. Girão  
"Theory and Developments in an Unobtrusive Cardiovascular System Representation: Ballistocardiography", *The Open Biomedical Engineering Journal*, Vol. 4, No. 1, pp. 201 - 216, October 2010.
- 9.1.40** E.C. Pinheiro, O. Postolache, P.M. Girão  
"Implementation of Compressed Sensing in Telecardiology Sensor Networks", *International Journal of Telemedicine and Applications*, Vol. 2010, No. 1, pp. 1 - 12, September 2010.
- 9.1.41** E.C. Pinheiro, O. Postolache, P.M. Girão  
"Fixed-point implementation of infinite impulse response notch filters", *Metrology and Measurement Systems*, Vol. XVII, No. 2, pp. 217 - 232, June 2010.
- 9.1.42** J.M. Dias Pereira, O. Postolache, P.M. Girão  
"Spread Spectrum Techniques in Wireless Communication", *IEEE*

Instrumentation and Measurement Magazine, Vol. 12, No. 6, pp. 21 - 24, December 2009.

**Invited paper.**

**9.1.43** J.M. Dias Pereira, O. Postolache, P.M. Girão

"PDF-based Progressive Polynomial Calibration Method for Smart Sensors Linearization", IEEE Transactions on Instrumentation and Measurement, Vol. 58, No. 9, pp. 3245 - 3252, September 2009.

**Invited paper.**

**9.1.44** O. Postolache, J.M. Dias Pereira, P.M. Girão

"Smart Sensors Network for Air Quality Monitoring Applications", IEEE Transactions on Instrumentation and Measurement, Vol. 58, No. 9, pp. 3253 - 3261, September 2009.

**9.1.45** G. Postolache, L. Silva Carvalho, O. Postolache, P.M. Girão, I. Rocha

"HRV and BPV neural network model with wavelet based algorithm calibration", Measurement, Vol. 42, No. 6, pp. 805 - 814, July 2009.

**9.1.46** O. Postolache, P.M. Girão, A.A. Anand, P.S. Sinha, G. Postolache

"Health status and air quality parameters monitoring based on mobile technology and WPAN", International Journal Advanced Media and Communication, Vol. 3, No. 1/2, pp. 139 - 153, April 2009.

**9.1.47** V. Viegas, J.M. Dias Pereira, P.M. Girão

"A Brief Tutorial on the IEEE 1451.1", IEEE Instrumentation and Measurement Magazine, Vol. 11, No. 2, pp. 38 - 46, April 2008.

**Invited paper.**

**9.1.48** H.G. Ramos, L.M. Gurrina, O. Postolache, J.M. Dias Pereira, P.M. Girão

"Development and Characterization of a Conductivity Cell for Water Quality Monitoring", Transactions on Systems, Signals and Devices, Vol. 3, No. 4, pp. 483 - 498, April 2008.

**9.1.49** O. Postolache, P. Girão, M. Pereira, Helena Ramos

"Intelligent Processing of the Dynamic Response of Sensors for Water Quality

Monitoring”, Transactions on Systems, Signals and Devices, Issue on Sensors, Circuits & Instrumentation Systems, Vol.3, No. 4, pp. 539-550, April 2008.

- 9.1.50** Vítor Viegas, J.M. Dias Pereira, P.M.B. Silva Girão  
“NET Framework and Web Services: A Profit Combination to Implement and Enhance the IEEE 1451.1 Standard”, IEEE Transactions on Instrumentation and Measurement, Vol. 56, n. 6, pp. 2739-2747, December 2007.
- 9.1.51** O. Postolache, P.S. Girão, J.M. Dias Pereira, Helena Ramos  
“Multi-Beam Optical System and Neural Processing for Turbidity Measurement”, IEEE Sensors Journal, Vol. 7, No. 5, pp. 679-684, May 2007.
- 9.1.52** J. Dias Pereira, O. Postolache, P. Silva Girão  
“Wavelet Techniques: A Suitable Tool to Characterise and Optimize Encoders’ Based Systems”, Measurement, Elsevier Science B. V., vol. 40, n. 3, pp. 264-271, April 2007.
- 9.1.53** J.M. Dias Pereira, O. Postolache, P.M.B. Silva Girão  
“A Digitally Programmable A/D Converter for Smart Sensors Applications”, IEEE Transactions on Instrumentation and Measurement, Vol. 56, n. 1, pp. 158-163, February 2007.
- 9.1.54** O. Postolache, J.M. Dias Pereira, P. Silva Girão, C. Banha, H. Ramos  
“Dew Point and Relative Humidity Smart Measuring System”, IEEE Transactions on Instrumentation and Measurement, Vol. 55, n. 6, pp. 2259-2264, December 2006.
- 9.1.55** J.M. Dias Pereira, O. Postolache, P. Silva Girão  
“Using a Dual-Channel FDC Device and ANN Techniques to Improve Measurements Accuracy”, Sensors & Transducers Journal, ISSN 1726-5479, Vol. 62, Issue 12, pp. 462-472, December 2005.
- 9.1.56** O.A. Postolache, P.M.B.S. Girão, J.M.D. Pereira, H.M.G. Ramos  
“Self-Organizing Maps Application in a Remote Water Quality Monitoring System”, IEEE Transactions on Instrumentation and Measurement, Vol. 54, n. 1, pp. 322-329, February 2005.

- 9.1.57** J.M. Dias Pereira, Octavian Postolache, P. Silva Girão  
“HART Protocol Analyser Based in LabVIEW”, International Journal of Computing (ISSN 1727-6209), Vol. 3, Issue 2, pp. 39-42, September 2004.  
**Invited paper.**
- 9.1.58** Helena Ramos, M. Pereira, V. Viegas, O. Postolache, P. Girão  
“A Virtual Instrument to Test Smart Transducer Interface Modules (STIMs)”, IEEE Transactions on Instrumentation and Measurement, Vol. 53, n. 4, pp. 1232-1239, August 2004.
- 9.1.59** Francisco Alegria, Pedro Girão, Vladimir Haasz, António Serra  
“Performance of Data Acquisition Systems from the User’s Point of View”, IEEE Transactions on Instrumentation and Measurement, Vol. 53, n. 4, pp. 907-914, August 2004.
- 9.1.60** J.M. Dias Pereira, P.M.B. Silva Girão, A. Cruz Serra  
“An FFT-Based Method to Evaluate and Compensate Gain and Offset Errors of Interleaved ADC Systems”, IEEE Transactions on Instrumentation and Measurement, Vol. 53, No. 2, pp. 423-430, April 2004.
- 9.1.61** Pedro Girão, Octavian Postolache, Miguel Pereira, Helena Ramos  
“Distributed Measurement Systems and Intelligent Processing for Water Quality Assessment”, Sensors & Transducers Journal, ISSN 1726-5479, Vol. 38, Issue 12, pp. 82-93, December 2003.
- 9.1.62** J.M. Dias Pereira, O. Postolache, P. Silva Girão  
“Colored Light-to-Voltage Converters Based Absorbance Meter”, International Scientific Journal of Computing, Vol. 2, Issue 1, pp. 58-64, July 2003.  
**Invited paper.**
- 9.1.63** O. Postolache, J.M. Dias Pereira, P. Silva Girão, Helena Ramos  
“Increasing Ion Selective Electrode Performance Using Neural Networks”, International Scientific Journal of Computing, Vol. 2, Issue 1, pp. 17-24, July 2003.  
**Invited paper.**

- 9.1.64** Octavian Postolache, Miguel Dias Pereira, Pedro Silva Girão, Cristina Temneanu  
 “Neural Networks and Fuzzy Models Applications on Water Quality Monitoring Systems”, International Scientific Journal of Optoelectronic Information-Power Technologies", n.2 (4), pp. 159-170, 2002.
- 9.1.65** J. Dias Pereira, P. Silva Girão, A. Cruz Serra  
 “Dithering Performance of Oversampled ADC Systems Affected by Hysteresis”, Measurement, Elsevier Science B. V., vol. 32, n. 1, pp. 51-59, July 2002.
- 9.1.66** P.M.B. Silva Girão, O.A. Postolache, J.A. Brandão Faria, J.M.C. Dias Pereira  
 “An Overview and a Contribution to the Optical Measurement of Linear Displacement”, IEEE Sensors Journal, Vol. 1, Issue 4, pp. 322-331, December 2001.
- Invited paper.**
- 9.1.67** J.M. Dias Pereira, P.M.B. Silva Girão and Octavian Postolache  
 “Fitting Transducer Characteristics to Measured Data”, IEEE Instrumentation & Measurement Magazine, pp. 26-39, December 2001.
- Invited paper.**
- 9.1.68** J.M.D. Pereira, O. Postolache, P.M.B.S. Girão and M. Cretu  
 “Minimizing Temperature Drift Errors of Conditioning Circuits Using Artificial Neural Networks”, IEEE Transactions on Instrumentation and Measurement, Vol. 49, N° 5, pp. 1122-1127, October 2000.
- 9.1.69** J. Brandão Faria, Octavian Postolache, J. Dias Pereira and P. Silva Girão  
 “Automated Characterization of a Bifurcated Optical Fiber Bundle Displacement Sensor Taking into Account Reflector Tilting Effects”, Microwave and Optical Technology Letters, Volume 26, Number 4, pp. 242-247, August 20, 2000.
- 9.1.70** J. Dias Pereira, O. Postolache, P.M. Silva Girão  
 “A Temperature Compensated System for Magnetic Field Measurement Based on Artificial Neural Networks”, IEEE Transactions on Instrumentation and Measurement, vol. 47, n. 2, pp. 494-498, April 1998.
- 9.1.71** H. Geirinhas Ramos, P. Silva Girão

“Experimental Validation of a Two Dimensional Vector Model of Ferromagnetic Hysteresis”, pp. 540-543.

Studies in Applied Electromagnetics and Mechanics, 10 - Nonlinear Electromagnetic Systems - A. J. Moses and A. Basak (editors), IOS Press, 1996.

**Invited paper.**

- 9.1.72** H. Geirinhas Ramos, A. Lopes Ribeiro, P. Silva Girão  
“A Two-dimensional Vector Model of Ferromagnetic Hysteresis”, Journal of Magnetism and Magnetic Materials, Vol. 133, Nos 1-3, pp. 574-577, May 1994.
- 9.1.73** H. Geirinhas Ramos, P. Silva Girão  
“Measurement of Low Level DC Magnetic Fields Using a Synchronous Demodulation Technique”, IEEE Transactions on Instrumentation and Measurement, vol. 42, n.2, pp. 544-546, April 1993.
- 9.1.74** P.M.B. Silva Girão, J.F. Borges da Silva  
“Analog Circuit Simulation of Magnetic Dipole Behavior According to the Langevin-Weiss Theory of Ferromagnetism”, IEEE Transactions on Education, vol. 35, n. 2, pp. 153-158, May 1992.
- 9.1.75** H. Geirinhas Ramos, P. Silva Girão  
“A Rotating Field Automated Measurement System for the Characterization of Ferromagnetic Materials”, Journal of Applied Physics, vol. 69, n. 8, Part IIA, pp. 5103-5105, April 1991.
- 9.1.76** P.M.B. Silva Girão, J.F. Borges da Silva  
“Automated Measurement System to Generate a Preisach Type Model of Ferromagnetic Hysteresis”, IEEE Transactions on Instrumentation and Measurement, vol. IM-35, n.4, pp. 443-446, December 1986.

**National or Regional Publications**

- 9.1.77** Baikhozhaeva Bakhytkul Uzakovna, Pedro Manuel Brito da Silva Girão  
“University Metrological Education: Opportunities and Challenges”, Journal of Metrology, Kazakhstan, 2020.

- 9.1.78** Pedro Silva Girão, O. Postolache, G. Postolache, J.M. Dias Pereira  
“Unobtrusive Solutions for Health Monitoring and Physiotherapy”, *Medições e Ensaios*, nº 12, pp. 4-14, Janeiro 2016.  
**Invited paper**
- 9.1.79** Eduardo Pinheiro, Octavian Postolache, Pedro Girão, César da Costa  
“Identificação de Sistemas na Otimização do Controle de Nível em Regime Não Linear”, *Mecatrônica Atual*, nº 50, pp. 2-8, Março-Abril 2011.
- 9.1.80** Pedro M. B. Silva Girão  
“Contributions to *In-situ* Water Quality Monitoring”, *Buletinul Institutului Politehnic din Iasi, Sectia Electrotehnica, Energetica, Electronica*, Tomul LVI (LX), Fasc. 4, pp. 9-19, 2010.  
**Invited paper.**
- 9.1.81** O. Postolache, M. Pereira, P. Girão, M. Cretu, M. Temneanu  
“A Distributed Hybrid Neural Network Based System for Water Quality Monitoring”. *Buletinul Institutului Politehnic din Iasi, Sectia Electrotehnica, Energetica, Electronica*, Tomul XLVIII (LII), Fasc. 5B, pp. 235-241, 2002.
- 9.1.82** Pedro M. B. Silva Girão  
“Acreditação de laboratórios segundo a norma ISO/IEC 17025”, *Instrumentação e Metrologia*, Ano 1, nº 4, Fevereiro de 2001, pp. 44-48, Editora Banas e Sociedade Brasileira de Metrologia, S. Paulo, Brasil.  
**Invited paper.**
- 9.1.83** O. Postolache, P.S. Girão, C. Donciu, M.D. Pereira  
“A Laser Based Solution for Displacement Measurement”, *Buletinul Stiintific al Universitatii “Politehnica” din Timisoara*, Vol II, Tom 45 (59), Fascicola 1, 2000, pp 101-104, November 2000.
- 9.1.84** O. Postolache, C. Donciu, P.S. Girão, M.D. Pereira  
“A Practical Approach Concerning the Implementation of TMS320C50 in CO and Temperature Monitoring”, *Buletinul Stiintific al Universitatii “Politehnica” din Timisoara*, Vol II, Tom 45 (59), Fascicola 1, 2000, pp 97-100, November 2000.

- 9.1.85** Helena Ramos, O. Postolache, J. M. Dias Pereira, P. Silva Girão  
“A LVDT-Based Vibration Meter”, Buletinul Institutului Politehnic din Iasi, Sectia Electrotehnica, Energetica, Electronica, Tomul XLV (IL) Fasc. 5A, pp. 370-376, November 1999.
- 9.1.86** O. Postolache, Helena Ramos, P. Silva Girão, J.M. Dias Pereira, M. Cretu  
“The Multisensor ANN Fusion Method for Accurate Displacement Measurement”, Buletinul Institutului Politehnic din Iasi, Sectia Electrotehnica, Energetica, Electronica, Tomul XLV (IL) Fasc. 5A, pp. 363-369, November 1999.
- 9.1.87** Paulo Maia Santos and Pedro Silva Girão  
“Telemetry Using Cellular Mobile Communications”, Buletinul Institutului Politehnic din Iasi, Sectia Electrotehnica, Energetica, Electronica, Tomul XLV (IL) Fasc. 5A, pp. 285-290, Iasi, Romania, November 1999.
- 9.1.88** J. Dias Pereira, P.M. Silva Girão  
“Instrumentação para Medidas Eléctricas: Dos Instrumentos Analógicos aos Instrumentos Virtuais”.  
Ingenium, II Série, Nº 28, pp. 69-76, Agosto de 1998.
- 9.1.89** J.M. Dias Pereira, A. Cruz Serra, P. Silva Girão  
“Sistema de temporização e disparo para aquisição e processamento digital de sinais periódicos”.  
Ingenium, II Série, Nº 19, pp. 60-63, Julho 1997.
- 9.1.90** J.M. Dias Pereira, P. Silva Girão  
“Medidor de Impedância Baseado em Computador Pessoal”.  
Electricidade, Nº 336, pp.195-203, Setembro 1996.

## **9.2 Books and Book Chapters**

- 9.2.1** J. M. Dias Pereira, V. Viegas, O. Postolache, P.M. Girão  
“Piezoelectric Devices: Vibration Measurements and Performance Evaluation of Energy Harvesting Modules”, Chapter in Advances in Engineering Research. Volume 52, Nova Publisher, New York, 2023.

- 9.2.2** Pedro M. Ramos, Pedro Silva Girão  
*“Instrumentação e Medidas”*, LIDEL, Lisboa, Portugal, 2022.
- 9.2.3** O. Postolache, G. Postolache, F.C. Cary, F. Lourenço, R.O. Oliveira, P.M. Girão  
*“Serious Game based on Kinect and Leap Motion Controller for Upper Limbs Physical Rehabilitation”*, Chapter in *Modern Sensing Technologies*, Subhas Mukhopadhyay, Krishanthi Jayasundera, Octavian Postolache, Springer Berlin Heidelberg, Sydney, 2018.
- 9.2.4** P. Ferreira, R. Parafita, P.S. Girão, P.L. Correia, and D.C. Costa  
*“Radioembolization with 90Y-Labeled Glass Microspheres: Analytical Methods for Patient-Personalized Voxel-Based Dosimetry”*, Lectures Notes in Computational Vision and Biomechanics 27, VipIMAGE 2017: Proceedings of the VI ECCOMAS Thematic Conference on Computational Vision and Medical Image Processing, Porto, Portugal, October 2017, pp. 185-191, Springer International Publishing AG 2018, Switzerland.
- 9.2.5** O. Postolache, V. Viegas, J. Freire, J.M. Dias Pereira, P.M. Girão  
*“IEEE1451 Smart Sensors Architectures for Vital Signs and Motor Activity Monitoring”*, *Advanced Interfacing Techniques for Sensors. Measurement Circuits and Systems for Intelligent Sensors*, Bobby George, Joyanta Kumar Roy, V. Jagadeesh Kumar, Subhas Chandra Mukhopadhyay (Editors), Springer International Publishing, Cham, Switzerland, 2017.
- 9.2.6** O. Postolache, J.M. Dias Pereira, M.R. Ribeiro, P.M. Girão  
*“Assistive Smart Sensing Devices for Gait Rehabilitation Monitoring”*, *ICTs for Improving Patients Rehabilitation Research Techniques*, Springer International Publishing, Berlin Heidelberg, 2015.
- 9.2.7** M.R. Ribeiro, O. Postolache, P.M. Girão  
*“A Novel Smart Sensing Platform for Vital Signs and Motor Activity Monitoring”*, *Sensing Technology: Current Status and Future Trends I*, Mason, A.; Mukhopadhyay, S.C.; Jayasundera, K.P.; N. Bhattacharyya (Editors), Springer, Heidelberg, 2014.

- 9.2.8** Octavian Postolache, Pedro Silva Girão, and Gabriela Postolache  
*“Pervasive Sensing and M-Health: Vital Signs and Daily Activity Monitoring”*, Pervasive and Mobile Sensing and Computing for Healthcare - Technological and Social Issues -, Smart Sensors, Measurement and Instrumentation, Volume 2, S.C. Mukhopadhyay, Octavian A. Postolache. (Editors), 1–49, Springer-Verlag Berlin Heidelberg, 2013.
- 9.2.9** Gabriela Postolache, Pedro Silva Girão, and Octavian Postolache  
*“Requirements and Barriers to Pervasive Health Adoption”*, Pervasive and Mobile Sensing and Computing for Healthcare, - Technological and Social Issues, Smart Sensors, Measurement and Instrumentation, Volume 2, S.C. Mukhopadhyay, Octavian A. Postolache (Editors), 315–359, Springer-Verlag Berlin Heidelberg, 2013.
- 9.2.10** V. Viegas, P.S. Girão, J.M. Pereira  
*“Service eXtensions for Instrumentation (SXI)”*. Advanced Distributed Measuring Systems – Exhibits of Application, Vladimir Haasz (Editor), pp. 5-33, ISBN 9788792329721, River Publishers, Aalborg, Denmark, March, 2012.
- 9.2.11** Octavian Postolache, Pedro Silva Girão and José Miguel Dias Pereira  
*“Water Quality Monitoring and Associated Distributed Measurement Systems: An Overview”*, Water Quality Monitoring and Assessment, Kostas Voudouris and Dimitra Voutsas (Editors), pp. 25-64, ISBN: 978-953-51-0486-5, Ialem, April, 2012.
- 9.2.12** Octavian Postolache, José Miguel Pereira, Pedro Silva Girão, António Almeida Monteiro  
*“Greenhouse Environment; Air and Water Monitoring”*. Lecture Notes in Electrical Engineering, vol. 146, Smart Sensing Technology for Agriculture and Environmental Monitoring, Subhas Chandra Mukhopadhyay (Editor), pp. 81-102, ISBN 978-3-642-27637-5, Springer-Verlag Berlin Heidelberg, February, 2012.
- 9.2.13** O. Postolache, J.M. Dias Pereira, P.M. Girão, G. Postolache  
*“Distributed Smart Sensing for Indoor Monitoring of Respiratory Distress Triggering Factors”*. Chemistry, Emission, Control, Radioactive Pollution and

Indoor Air Quality, Chapter 12, pp. 311-330, In-Tech, Rijeka, 2011.

- 9.2.14** J.M. Dias Pereira, O. Postolache, P.M. Girão  
*“Underwater Acoustic Source Localization and Sounds Classification in Distributed Measurement Networks”*. Series: “Advances in Sound Localization”, Society for Instrumentation, Systems, and Automation Society (ISA/In-Tech), 2011.
- 9.2.15** Octavian Postolache, Pedro Silva Girão, José Miguel Dias Pereira  
*“Water Quality Assessment through Smart Sensing and Computational Intelligence”*. New Developments and Applications in Sensing Technology, Lecture Notes in Electrical Engineering, Vol. 83, pp. 191-201, Springer-Verlag, Berlin Heidelberg, 2011.
- 9.2.16** J.M. Dias Pereira, O. Postolache, P.M. Girão  
*“Analog to Digital Conversion Methods for Smart Sensing Systems”*. Advances in Measurement Systems, Series: “Advances in Measurement Systems”, Society for Instrumentation, Systems, and Automation Society (ISA/In-Tech), Milind Kr Sharma, In-Tech, Vulovar, Croatia, 2010.  
**Invited publication.**
- 9.2.17** O. Postolache, P.M. Girão, J.M. Dias Pereira  
*“Non-volatile memory interface protocols for smart sensor networks and mobile devices”*. Series: “Data Storage”, Society for Instrumentation, Systems, and Automation Society (ISA/In-Tech), Florin Balasa, In-Tech, Wien, 2010.  
**Invited publication.**
- 9.2.18** O. Postolache, P.M. Girão, E.C. Pinheiro, G. Postolache  
*“Unobtrusive and Non-invasive Sensing Solutions for on-line Physiological Parameters Monitoring”*. Wearable and Autonomous Biomedical Devices and Systems for Smart Environment, Aimé Lay-Ekuakille, Subhas Chandra Mukhopadhyay (Editors), Springer, Berlin, 2010.
- 9.2.19** O.A. Postolache, J.M.C. Dias Pereira, P.M.B. Silva Girão  
*“Virtual Instrumentation”*. Data Modeling for Metrology and Testing in

Measurement Science. Editors: Franco Pavese (INRIM), Alistair Forbes (NPL). Series “Modeling and Simulation in Science, Engineering and Technology”, pp. 413-449, Birkhauser-Springer, Boston, 2008.

**Invited publication.**

- 9.2.20** P.M.B. Silva Girão, O.A. Postolache, J.M.C. Dias Pereira  
“*Data Fusion, Decision Making, Risk Analysis*”. Data Modeling for Metrology and Testing in Measurement Sciences. Editors: Franco Pavese (INRIM), Alistair Forbes (NPL). Series “Modeling and Simulation in Science, Engineering and Technology”, pp. 205-250, Birkhauser-Springer, Boston, 2008.

**Invited publication.**

- 9.2.21** Pedro Silva Girão, José Miguel Dias Pereira, Octavian Postolache  
“*Multisensor Data Fusion and its Application to Decision Making*”, Advanced Mathematical and Computational Tools in Metrology VII, Series on Advances in Mathematics for Applied Sciences, vol. 72, pp. 47-59, World Scientific Publishing Co., 2006.

**Invited publication.**

- 9.2.22** P.M.B. Silva Girão (2003), B.G. Lipták (1985, 1994), C.S. Beard (1979). Editor: Béla Lipták.  
“*Actuators: Digital, Electric, Hydraulic, Solenoid*”. Process Control and Optimization, Volume II, Instrument Engineers’ Handbook, pp. 1105-1123, CRC – Taylor & Francis Group, Boca Raton, USA, 2006.

**Invited publication.**

- 9.2.23** P.M.B. Silva Girão (2003), B.G. Lipták (1994), G.F. Erk (1985), F.D. Marton (1970). Editor: Béla Lipták.  
“*Recorders, Oscillographs, Loggers, Tape Recorders*”, Process Control and Optimization, Volume II, Instrument Engineers’ Handbook, pp. 818-828, CRC – Taylor & Francis Group, Boca Raton, USA, 2006.

**Invited publication.**

- 9.2.24** P.M.B. Silva Girão (2003), B.G. Lipták (1994), J. Venczel (1985). Editor: Béla Lipták.

“*Digital Readouts and Graphic Displays*”. Process Control and Optimization, Volume II, Instrument Engineers’ Handbook, pp. 757-769, CRC – Taylor & Francis Group, Boca Raton, USA, 2006.

**Invited publication.**

**9.2.25** P.M.B. Silva Girão (2003). Editor: Béla Lipták.

“*Controllers-Electronic*”. Process Control and Optimization, Volume II, Instrument Engineers’ Handbook, pp. 478-487, CRC – Taylor & Francis Group, Boca Raton, USA, 2006.

**Invited publication.**

**9.2.26** P.M.B. Silva Girão (2003), C.L. Mamzic. Editor: Béla Lipták.

“*Controllers-Pneumatic*”. Process Control and Optimization, Volume II, Instrument Engineers’ Handbook, pp. 460-477, CRC – Taylor & Francis Group, Boca Raton, USA, 2006.

**Invited publication.**

**9.2.27** P.M.B. Silva Girão (2002), B.G. Lipták (1994), A. Brodgesell (1969, 1982). Editor: Béla Lipták.

“*Torque and Force Transducers*”. Process Measurement and Analysis, Instrument Engineers’ Handbook, Volume 1, pp. 1051-1060, CRC Press, Boca Raton, USA, 2003.

**Invited publication.**

**9.2.28** P.M.B. Silva Girão (2002), B.G. Lipták, P.M. Glattstein (1972, 1982). Editor: Béla Lipták.

“*Electrical Meters and Sensors*”. Process Measurement and Analysis, Instrument Engineers’ Handbook, Volume 1, pp. 889-902, CRC Press, Boca Raton, USA, 2003.

**Invited publication.**

**9.2.29** P.M.B. Silva Girão (2002), B.G. Lipták (1993), R.W. Worrall (1982), T.J. Claggett (1969). Editor: Béla Lipták.

“*Thermistors*”. Process Measurement and Analysis, Instrument Engineers’ Handbook, Volume 1, pp. 666-672, CRC Press, Boca Raton, USA, 2003.

**Invited publication.**

- 9.2.30** P.M.B. Silva Girão, A.M. Cruz Serra, H.M.S Geirinhas Ramos. Editor: John G. Webster.

“*Logic Analyzers*”, Wiley Encyclopedia of Electrical and Electronics Engineering, December 2001.

**Invited publication.**

- 9.2.31** Pedro M. B. Silva Girão, António M. Cruz Serra, Helena M. Geirinhas Ramos. Editor: John G. Webster.

“*Electric Distortion Measurement*”, Wiley Encyclopedia of Electrical and Electronics Engineering, Volume 23, pp. 286-293, J. Wiley & Sons, New York, USA, 1999.

**Invited publication.**

- 9.2.32** Pedro M. B. Silva Girão, António M. Cruz Serra, Helena M. Geirinhas Ramos. Editor: John G. Webster.

“*Volt-Ampere Meters*”, Wiley Encyclopedia of Electrical and Electronics Engineering, Volume 6, pp. 352-359, J. Wiley & Sons, New York, USA, 1999.

**Invited publication.**

- 9.2.33** P.M.B. Silva Girão

Caracterização de Materiais Magnéticos pelo Modelo de Preisach. Identificação do Modelo e sua Aplicação em Simulação Numérica, IST 1988.

**9.3 Papers in Peer-reviewed Conferences and Congresses**

- 9.3.1** O. Postolache, J. M. Dias Pereira, V. Viegas, P.M. Girão

“A Dual-Purpose Device for Condition-Based Maintenance and Energy Harvesting in the Context of IIoT Applications”, International Conference on Sensing and Instrumentation in IoT Era ISSI, Azores, Portugal, Vol. 1, pp. 1 - 6, August, 2024.

- 9.3.2** O. Postolache, J. M. Dias Pereira, V. Viegas, P.M. Girão

“A Flexible and Low-Cost Solution to Measure and Stimulate NNS Skills of Premature Babies”, IEEE International Instrumentation and Measurement

Technology Conference I2MTC, Conference online, Vol. 1, pp. 1 - 6, May, 2021.

- 9.3.3** T. Paredes, J. Monge, O. Postolache, P.M. Girão  
“Gait Rehabilitation System based on Mixed Reality”, Conf. on Telecommunications - ConfTele, Lisbon, Portugal, Vol. 1, pp. 1 - 6, February, 2021.
- 9.3.4** G. Postolache, O. Postolache, J. M. Dias Pereira, P.M. Girão, V. Viegas  
“IoT based Model of Healthcare for Physiotherapy”, International Conf. on Sensing Technology - ICST, Sydney, Australia, Vol. 1, pp. 1 - 6, December, 2019.
- 9.3.5** O. Postolache, G. Postolache, A. Trandabat, O. Plopa, P.M. Girão  
“Wearable devices for studying microvascular reactivity – it is feasible?”, IEEE Conf. on e-Health and Bioengineering - EHB, Iasi, Romania, Vol. 1, pp. 1 - 5, November, 2019.
- 9.3.6** J. M. Dias Pereira, V. Viegas, O. Postolache, P.M. Girão  
“Software Based Sigma-Delta Converter with Auto-Calibration Capabilities”, IFSA International Conference on Sensors and Electronic Instrumentation Advances SEIA, Tenerife, Spain, Vol., pp. -, September, 2019.
- 9.3.7** Vítor Viegas, José Costa Pereira, Pedro M. B. Silva Girão and Octavian Adrian Postolache  
“A preliminary study of loop-time delays in IoT platforms: the ThingSpeak case”, IEEE International Symposium on Sensing and Instrumentation in IoT Era(ISSI), Lisbon, Portugal, August 2019.
- 9.3.8** J. M. Dias Pereira, V. Viegas, O. Postolache, P.M. Girão  
“A Dual Measurement and Stimulating System to Monitor and Promote NNS”, IMEKO Joint IMEKO TC1-TC7-TC13 Symposium, São Petersburg, Russia, Vol. 1, pp. 42 - 46, July, 2019.
- 9.3.9** R. Alexandre, O. Postolache, P.M. Girão  
“Physical Rehabilitation based on Smart Wearable and Virtual Reality Serious Game”, IEEE International Instrumentation and Measurement Technology Conference I2MTC, Auckland, New Zealand, Vol. 1, pp. 1 - 6, May, 2019.

- 9.3.10** O. Postolache, L. Teixeira, J. Cordeiro, M. Rodrigues, L. L. Lima, P.A. Arriaga, P.M. Girão, G. Postolache  
“Tailored Virtual Reality for Smart Physiotherapy, IEEE Advanced Topics in Electrical Engineering - ATEE, Bucharest, Romania, Vol. 1, pp. 1 - 6, March, 2019.
- 9.3.11** V.R. Roza, A. M. Almeida, P.M. Girão, O. Postolache  
“Performance Analysis of ANN and SVM in ECG Based Arrhythmia Identification”, XXII IMEKO World Congress, Belfast, Ireland, Vol., pp. -, September, 2018.
- 9.3.12** V. Viegas, J. M. Dias Pereira, P.M. Girão, O. Postolache, R. S. Salgado  
“IoT applied to environmental monitoring in oysters’ farms”, IEEE International Symposium on Sensing and Instrumentation in IoT Era ISSI, Shanghai, P. R. China, Vol., pp. -, September, 2018.
- 9.3.13** V. Viegas, J. M. Dias Pereira, O. Postolache, P.M. Girão  
“Spy Walker - A Convenient Way to Assess Gait in Walker Assistive Devices”, IEEE International Instrumentation and Technology Conf. - I2MTC, Houston, United States, Vol., pp. -, May, 2018.
- 9.3.14** O. Postolache, V. Viegas, J.M. Dias Pereira, P.M. Girão  
“Application of Force and Inertial Sensors to Monitor the Usage of Walker Assistive Devices”, IMEKO TC4 Symp., Iasi, Romania, Vol. 1, pp. 1 - 6, September, 2017.
- 9.3.15** O. Postolache, G. Postolache, R.O. Oliveira, P.M. Girão, J.M. Dias Pereira  
“Tailoring Information and Communication Technologies to Support Physiotherapy for Rural Elderly”, IEEE Conf. on e-Health and Bioengineering - EHB, Sinaia, Romania, Vol. 1, pp. 1 - 4, June, 2017.
- 9.3.16** J. M. Dias Pereira, V. Viegas, O. Postolache, P.M. Girão  
“Combining Distance and Force Measurements to Monitor the Usage of Walker Assistive Devices”, IEEE International Instrumentation and Technology Conf. - I2MTC, Torino, Italy, Vol. 1, pp. 11 - 16, May, 2017.

- 9.3.17** O. Postolache, F. L. Lourenço, J. M. Dias Pereira, P.M. Girão  
“Serious Game for Physical Rehabilitation: Measuring the Effectiveness of Virtual and Real Training Environments”, IEEE International Instrumentation and Measurement Technology Conference I2MTC, Torino, Italy, Vol. 1, pp. 1 - 6, May, 2017.
- 9.3.18** P. Ferreira, A. Canudo, C. Oliveira, L. Rosa, P.M. Girão, P.L. Correia, Costa D.C. Costa  
"Gamma-Index and Dose-Volume Histograms (Based on Voxel Dosimetry) to Evaluate the Predictive Power of <sup>99m</sup>Tc-MAA SPECT Maps in Comparison with Post-Radioembolization <sup>90</sup>Y PET Maps”, IEEE Portuguese Meeting on Bioengineering ENBENG, Coimbra, Portugal, February, 2017.
- 9.3.19** E.C. Pinheiro, O. Postolache, P.M. Girão  
“Ballistocardiogram: Model and Sensing Systems”, International Conf. on Sensing Technology - ICST, Nanjing, P. R. China, Vol. 1, pp. 1 - 5, November, 2016.
- 9.3.20** J.M. Dias Pereira, Mário Alves, Vítor Viegas, Octavian Postolache, Pedro Silva Girão  
"An Automated Test and Measurement System for Calibration of Industrial Flowmeters", 21st IMEKO TC4 International Symposium, Vol. 1, pp. 89-92, Budapest, Hungary, September, 2016.
- 9.3.21** Paulo Ferreira, Rui Parafita, Ana Canudo, Carla Oliveira, Luís Rosa, Pedro Girão, Durval C. Costa  
“Optimization of Activity and Absorbed Doses Calculation to Target Tumor and Normal Liver Volumes in Patients Submitted to Yttrium-90 Radioembolization with Glass Microspheres”, 1st European Congress of Medical Physics, Athens, Greece, September, 2016.
- 9.3.22** O. Postolache, P.M.B.S. Girão  
“Physiotherapy Smart Connected Devices for Smart-Health”, International Conf. on Information, Intelligence Systems and Applications – IISA, Chalkidiki, Greece, July 2016.

- 9.3.23** O. Postolache, V. Viegas, J. M. Dias Pereira, P.M. Girão  
“NUI Therapeutic Serious Games with Metric Validation based on Wearable Devices”, IEEE International Instrumentation and Measurement Technology Conference I2MTC, Taipei, Taiwan, Vol. 1, pp. 1 - 6, May, 2016.
- 9.3.24** O. Postolache, P.M. Girão, A. López, F.J. Ferrero, J. M. Dias Pereira, G. Postolache  
“Postural Balance Analysis using Force Platform for K-Theragame users”, IEEE International Symp. on Medical Measurements and Applications - MeMeA, Benevento, Italy, Vol. 1, pp. 1 - 6, May, 2016.
- 9.3.25** G. Postolache, P.M. Girão, O. Postolache  
“Wearable Sensor Network to Study Laterality of Brain Functions”, International Conf. of the IEEE Engineering in Medicine and Biology Society - EMBC, Milan, Italy, Vol. 1, pp. 1 - 4, August, 2015.
- 9.3.26** O. Postolache, F.C. Cary, N.D. Duarte, P.M. Girão  
“Physiotherapy Assessment Based on Kinect and Mobile APPs”, International Conf. on Information, Intelligence Systems and Applications - IISA, Corfu, Greece, Vol. 1, pp. 1 - 6, July, 2015.
- 9.3.27** J.M. Dias Pereira, Vítor Viegas, Octavian Postolache, Pedro Silva Girão  
"Fieldbus: Developing a Laboratory Prototype for Learning Purposes", International Conference on Electronic Measurement and Instruments (ICEMI'2015), Vol. 1, pp. 387-390, Qingdao, P. R. China, July, 2015.
- 9.3.28** Octavian Postolache, J.M. Dias Pereira, Pedro Silva Girão, Vítor Viegas, Gabriela Postolache  
"WSN Gait Monitoring for Objective Evaluation of Rehabilitation Process", International Conference on Electronic Measurement and Instruments (ICEMI'2015), Vol. 1, pp. 1637-1641, Qingdao, P. R. China, July, 2015.
- 9.3.29** V. Viegas, J.M. Dias Pereira, P.M. Girão, G. Postolache, O. Postolache  
"Smart Transducer Interfaces Applied to Health Monitoring", Proceedings IEEE Instrumentation and Measurement Technology Conference, Pisa, Italy, Vol. 1, pp. 1 - 6, May, 2015.

- 9.3.30** J.M. Dias Pereira, O. Postolache, V. Viegas, P.M. Girão  
 “A Low Cost Measurement System to Extract Kinematic Parameters from Walker Devices”, Proceedings IEEE Instrumentation and Measurement Technology Conference, Pisa, Italy, Vol. 1, pp. 1 - 6, May, 2015.
- 9.3.31** O. Postolache, J.M. Dias Pereira, V. Viegas, P.M. Girão  
 "Gait rehabilitation assessment based on microwave Doppler radars embedded in walkers", Proceedings IEEE International Symposium on Medical Measurements and Applications, Torino, Italy, Vol. 1, pp. 1 - 6, May, 2015.
- 9.3.32** V. Viegas, J.M. Dias Pereira, O. Postolache, P.M. Girão  
 "Transducer Electronic Data Sheets: Why Not Print Them?", Proceedings International Conference and Exposition on Electrical and Power Engineering - EPE, Iasi, Romania, Vol. 00, pp. 00 - 00, October, 2014.
- 9.3.33** F.C. Cary, O. Postolache, P.M. Girão  
 "Kinect Based System and Serious Game Motivating Approach for Physiotherapy Assessment and Remote Session Monitoring", Proceedings International Conference on Sensing Technology - ICST, Liverpool, United Kingdom, Vol. 1, pp. 1 - 5, September, 2014.
- 9.3.34** P.M. Girão, O. Postolache, P.M. Ramos, J.M. Dias Pereira  
 "Microwave Doppler Radar in Unobtrusive Health Monitoring", Proceedings IMEKO Joint IMEKO TC1-TC7-TC13 Symposium, Funchal, Portugal, Vol. 1, pp. 1 - 10, September, 2014.
- Invited paper**
- 9.3.35** P.M. Ramos, F.M. Janeiro, P.M. Girão  
 “Evaluation of the uncertainty of electrical impedance measurements: the GUM and its Supplement 2”, Proceedings IMEKO Joint IMEKO TC1-TC7-TC13 Symposium, Funchal, Portugal, Vol. 1, pp. 1 - 8, September, 2014.
- 9.3.36** G. Postolache, P.M. Girão, O. Postolache  
 "Applying smartphone apps to drive greater patient engagement and personalized physiotherapy", Proceedings IEEE International Symposium on Medical Measurements and Applications, Lisbon, Portugal, June, 2014.

- 9.3.37** F.C. Cary, O. Postolache, P.M. Girão  
"Kinect Based System and Artificial Neural Networks Classifiers for Physiotherapy Assessment", Proceedings IEEE International Workshop on Medical Measurements and Applications, Lisbon, Portugal, June, 2014.
- 9.3.38** O. Postolache, V. Viegas, J.M. Dias Pereira, D. Vinhas, P.M. Girão, G. Postolache  
"Toward Developing a Smart Wheelchair for User Physiological Stress and Physical Activity Monitoring", Proceedings IEEE International Symposium on Medical Measurements and Applications, Lisbon, Portugal, June, 2014.
- 9.3.39** O. Postolache, M.R. Ribeiro, P.M. Girão, J.M. Dias Pereira, G. Postolache  
"Unobtrusive Sensing for Gait Rehabilitation Assessment", Proceedings EAI International Pervasive Health Workshop on Patient Rehabilitation Research Techniques - REHAB, Oldenburg, Germany, May, 2014.
- 9.3.40** J. Freire, O. Postolache, P.M. Girão  
"IEEE1451.4 multi-sensing platform for wheelchair users assessment", Proceedings 21st International Conference on Telecommunications (ICT), Lisbon, Portugal, pp. 27-31, May 2014.
- 9.3.41** O. Postolache, M.R. Ribeiro, P.M. Girão, G. Postolache  
"Smart Sensors and Pervasive Computing for Healthcare", Proceedings IEEE Conf. on e-Health and Bioengineering - EHB, Iasi, Romania, Vol. 1, pp. 1 - 6, November, 2013.
- 9.3.42** O. Postolache, P.M. Girão, G. Postolache  
"Comparative analysis of two systems for unobtrusive heart signal", Proceedings International Conference of the IEEE Engineering in Medicine and Biology Society - EMBC, Osaka, Japan, Vol. I, pp. 7021 - 7024, July, 2013.
- 9.3.43** O. Postolache, J.M. Dias Pereira, P.M. Girão  
"Sensor Network for Environment Monitoring: Water Quality Case Study", Proceedings IMEKO TC19 Symposium, Lecce, Italy, Vol. 1, pp. 1 - 5, June, 2013.
- 9.3.44** E.C. Pinheiro, O. Postolache, P.M. Girão  
"Calibration and Validation of Homeostasis Parameters Estimates Produced by a

DSP Embedded in a Wheelchair", Proceedings IEEE International Instrumentation and Technology Conference - I2MTC, Minneapolis, United States, Vol. I, pp. 243 - 248, May, 2013.

**9.3.45** M.R. Ribeiro, O. Postolache, P.M. Girão

"Modular Platform Architecture for Fast Prototyping of Vital Signs and Motor Activity Monitors", Proceedings IEEE International Instrumentation and Technology Conf. - I2MTC, Minneapolis, United States, Vol. 1, pp. 681 - 686, May, 2013.

**9.3.46** J. Freire, O. Postolache, P.M. Girão, J.M. Dias Pereira

"Smart Sensors Architecture for Health Status Assessment of Wheelchair Users", Proceedings Conf. on Telecommunications - ConfTele, Castelo Branco, Portugal, May, 2013.

**9.3.47** E.C. Pinheiro, O. Postolache, P.M. Girão

"Dual Architecture Platform for Unobtrusive Wheelchair User Monitoring", Proceedings IEEE International Symposium on Medical Measurements and Applications - MeMeA, Gatineau, Canada, Vol. I, pp. 124 - , May, 2013.

**9.3.48** O. Postolache, P.M. Girão, G. Postolache

"Multi-channel architecture for evaluation of automated oscillometric blood pressure devices", Proceedings IEEE International Symposium on Medical Measurements and Applications - MeMeA, Gatineau, Canada, Vol. 1, pp. 1 - 6, May, 2013.

**9.3.49** T.P. Pereira, H. Carvalho, A.C. Catarino, M.J. Dias, O. Postolache, P.M. Girão

"Wearable Biopotential Measurement Using the TI ADS1198 Analog Front-End and Textile Electrodes", Proceedings IEEE International Symposium on Medical Measurements and Applications - MeMeA, Gatineau, Canada, Vol. 1, pp. 1 - 6, May, 2013.

**9.3.50** M.R. Ribeiro, O. Postolache, P.M. Girão

"Architectures for Modular Smart Sensor Systems", Proceedings International Conference on Sensing Technology - ICST, Kalkata, India, Vol. 1, pp. 1 - 7, December, 2012.

- 9.3.51** O. Postolache, J. Costa Freire, P.M. Girão, J.M. Dias Pereira  
"Smart Sensor Architecture for Vital Signs and Motor Activity Monitoring of Wheelchair' Users", Proceedings International Conference on Sensing Technology - ICST, Kolkata, India, Vol. 1, pp. 1 - 6, December, 2012.
- 9.3.52** J.M. Dias Pereira, O. Postolache, M.L. César, P.M. Girão  
"A Smart Sensing System to Analyze Piping Vibrations in Industrial Installations", Proceedings of International Conference on Sensing Technology - ICST, Kolkata, India, Vol. 1, pp. 7 - 14, December, 2012.
- 9.3.53** E.C. Pinheiro, O. Postolache, P.M. Girão  
"Monitorizar e Transmitir Imperceptivelmente Grandezas Biológicas Usando Quatro Bandas Espectrais", Proceedings URSI Seminar of the Portuguese Committee, Lisbon, Portugal, Vol. I, pp. 1 - 10, November, 2012.
- 9.3.54** A. Abdolalipour, O. Postolache, P.M. Girão  
"DSP Based Real-Time Adaptive Vital Signals Extraction Algorithm Using CW-Radar for Wheelchair Users", Proceedings International Workshop on Electromagnetic Compatibility and Engineering in Medicine and Biology - EPE-W, Iasi, Romania, Vol. 1, pp. 1 - 4, October, 2012.
- 9.3.55** C. Damian, O. Postolache, J.M. Dias Pereira, C. Fosalau, P. Silva Girão  
"Sensor Network for Water Quality Assessment", Proceedings International Workshop on Electromagnetic Compatibility and Engineering in Medicine and Biology - EPE-W, Iasi, Romania, Vol. 1, pp. 1 - 4, October, 2012.
- 9.3.56** O. Postolache, P.M. Girão, E.D. Lunca, P. Bicleanu, M. Andrusca  
"Unobtrusive Cardio-Respiratory Monitoring Based on Microwave Doppler Radar", Proceedings International Workshop on Electromagnetic Compatibility and Engineering in Medicine and Biology - EPE-W, Iasi, Romania, Vol. 1, pp. 1 - 4, October, 2012.
- 9.3.57** A. Catarino, H. Carvalho, M.J. Dias, T. Pereira, O. Postolache, P.S. Girão  
"Continuous Health Monitoring Using E-Textile Integrated Biosensors", 2012 International Conference and Exposition on Electrical and Power Engineering (EPE 2012), 25-27 October, 2012, Iasi, Romania.

- 9.3.58** E.C. Pinheiro, O. Postolache, P.M. Girão  
"A Practical Approach Concerning the Capacitive Acquisition of the Electrocardiogram in a Moving Wheelchair", Proc. IMEKO World Congress, Busan, South Korea, Vol. I, pp. xx - yy, September, 2012.
- 9.3.59** O. Postolache, P. Girão, M. Pereira, C. Grueau, H. Teixeira, M. Leal  
"Greenhouses Microclimate Real-time Monitoring Based on Wireless Sensor Network and GIS", Proc. IMEKO World Congress, Busan, South Korea, Vol. I, pp. xx - yy, September, 2012.
- 9.3.60** E.C. Pinheiro, O. Postolache, P.M. Girão  
"Evaluation of Compressed Sensing Impact in Cardiac Signals Processing and Transmission", Proceedings of SIAM Conf. on Applied Linear Algebra, Valencia, Spain, Vol. I, pp. 63 - 63, June, 2012.
- 9.3.61** Octavian Adrian Postolache, Pedro Girão, Hamza Ijaz and João Freire  
"IEEE 1451.4 Embedded Smart Sensors Architecture for Wheelchair User Monitoring", Proceedings of IEEE International Symposium on Medical Measurements and Applications, pp. 1 - 5, Budapest, Hungary, May 2012.
- 9.3.62** Octavian Adrian Postolache, Pedro Girão, Mario Ribeiro, Helder Carvalho, Andre Catarino and Gabriela Postolache  
"Treat me well: affective and physiological feedback for wheelchair users", Proceedings of IEEE International Symposium on Medical Measurements and Applications, pp. 1 - 7, Budapest, Hungary, May 2012.
- 9.3.63** O. Postolache, J.M. Dias Pereira, P.M. Girão, G. Postolache  
"Systems for Remote Monitoring of Indoor Air Quality and Respiration of Wheelchair Users", Proceedings of IEEE International Conf. on Signals, Systems, Devices - SSD, pp. Chemnitz, Germany, March 2012.
- 9.3.64** O. Postolache, P.M. Girão, J.M. Dias Pereira, G. Postolache  
"Smart Walker for Pervasive HealthCare", Proceedings International Conf. on Sensing Technology - ICST, Palmerston North, New Zealand, Vol. 1, pp. 1 - 5, December 2011.

- 9.3.65** J.M. Dias Pereira, O. Postolache, P.M. Girão  
"A Smart Conductivity Sensor with Temperature and Water Tide Level Compensation Capabilities", Proceedings International Conf. on Sensing Technology - ICST, Palmerstone North, New Zealand, Vol. 1, pp. 223 - 228 December 2011.
- 9.3.66** O. Postolache, P.M. Girão, J.M. Dias Pereira  
"Multi-sensing node architecture for water quality monitoring", Proceedings UPC Workshop Internacional sobre Tecnologia Marina, pp. , Cadiz, Spain, September 2011.
- 9.3.67** Vítor Viegas, P. Silva Girão, Miguel Pereira  
"Service-Oriented Distributed Measurement and Control Systems: A Case Study", Proceedings of The 6th IEEE International Conference on Intelligent Data Acquisition and Advanced Computing Systems: Technology and Applications (IDAACS'2011), pp. 145 - 151, Prague, Czech Republic, September 2011.
- 9.3.68** Octavian Postolache, Pedro Silva Girão, Sérgio Antunes, Fernando Tavares  
"RF Spectrum Monitoring and Management System Based on an RF Receiver Multi-server Architecture", Proceedings of The 6th IEEE International Conference on Intelligent Data Acquisition and Advanced Computing Systems: Technology and Applications (IDAACS'2011), pp. 176 - 179, Prague, Czech Republic, September 2011.
- 9.3.69** G. Postolache, M. Oliveira, I. Rocha, P.M. Girão, O. Postolache  
"New insight into arrhythmia onset using HRV and BPV analysis", Proceedings International Conf. of the IEEE Engineering in Medicine and Biology Society - EMBC, Boston, United States, Vol. 1, pp. 2691 - 2694, September 2011.
- 9.3.70** O. Postolache, P.M. Girão, G. Postolache, J. Mendes  
"Cardio-Respiratory and Daily Activity Monitor Based on FMCW Doppler Radar Embedded in a Wheelchair", Proceedings International Conf. of the IEEE Engineering in Medicine and Biology Society - EMBC, Boston, United States, pp. , August 2011.

- 9.3.71** O. Postolache, P.M. Girão  
"Mobile Solution for Air Quality Monitoring and Respiration Activity Monitoring based on an Android OS Smart Phone", Proceedings IMEKO TC19 Symp., Vol. 1, pp., Cavtat, Croatia, June 2011.
- 9.3.72** G. Postolache, I. Rocha, M. Oliveira, P.S. Girão and O. Postolache  
"Phase shift, coherence, BPV and HRV before and during self-terminating cardiac arrhythmia", Proceedings IEEE International Symposium on Medical Measurements and Applications, Bari, Italy, pp. 525 - 531, May 2011.
- 9.3.73** O. Postolache, P.S. Girão, M. Ribeiro, M. Guerra, J. Pincho, F. Santiago, A. Pena  
"Enabling telecare assessment with pervasive sensing and Android OS smartphone", Proceedings IEEE International Symposium on Medical Measurements and Applications, Bari, Italy, pp. 288 - 393, May 2011.
- 9.3.74** E.C. Pinheiro, O. Postolache, P.S. Girão  
"Cardiopulmonary Signal Processing for Wheelchairs with Embedded Sensors", Proceedings of the 2011 IEEE International Symposium on Medical Measurements and Applications, pp. 1 - 6, Bari, Italy, May 2011.
- 9.3.75** G. Postolache, C.M. Moura, P.M. Girão, O. Postolache  
"Rehabilitative TeleHealthCare for post-Stroke Outcome Assessment", Proceedings ICST International Conf. on Pervasive Computing Technologies for Healthcare, Dublin, Ireland, Vol. 1, pp. 1 - 6, May 2011.
- 9.3.76** E.C. Pinheiro, O. Postolache, P.M. Girão  
"Robust Heart Rate Estimation from Cardiovascular Signals Unobtrusively Acquired in a Wheelchair", Proceedings of 2011 IEEE International Instrumentation and Measurement Technology Conference, pp. 779-783, Hangzhou, P. R. China, May 2011.
- 9.3.77** E.C. Pinheiro, O. Postolache, P.M. Girão, J. Mendes, C.M. Moura, G. Postolache  
"Wheelchair User's Cardiovascular Evaluation System to Support Physiotherapy Sessions", Proceedings of 2011 IEEE International Instrumentation and Measurement Technology Conference, pp. 369-374, Hangzhou, P. R. China, May 2011.

- 9.3.78** O. Postolache, P.M. Girão, E.C. Pinheiro, R. Madeira, J.M. Dias Pereira, J. Mendes, G. Postolache, C. Moura  
"Multi-usage of Microwave Doppler Radar in Pervasive Healthcare Systems for Elderly", Proceedings IEEE International Instrumentation and Technology Conf. - I2MTC, Hangzhou, P. R. China, pp. 30 - 34, May 2011.
- 9.3.79** M.D. Pereira, O. Postolache and P.S. Girão  
"A virtual conductivity sensor for environmental measurements", Proceedings IEEE International Instrumentation and Technology Conf. - I2MTC, Hangzhou, P. R. China, pp. 1 - 5, May 2011.
- 9.3.80** E.C. Pinheiro, O. Postolache, P.M. Girão  
"Method for Segmentation of Cardiac Signals based on Four Parameter Sine Fitting", Proceedings EUROCON and CONFTELE 2011, Lisbon, Portugal, pp. , April 2011.
- 9.3.81** O. Postolache, P.M. Girão, E.C. Pinheiro, M.D. Pereira, R. Madeira, J. Mendes, M. Cunha, G. Postolache, C. Moura  
"Pervasive Sensing and Computing for Wheelchairs Users Health Assessment", Proceedings of the 1st Portuguese Meeting in BioEngineering, pp. 1-4, Lisbon, Portugal, March 2011.
- 9.3.82** Octavian Postolache, Pedro Silva Girão  
"Calibration and Application of a Pressure Mapping Sensor", Proceedings IMEKO 2010 TC#, TC5 and TC22 Conferences – Metrology in Modern Context, Pattaya, Chonburi, Thailand, pp. 329 – 332, November 2010.
- 9.3.83** O. Postolache, J.M. Dias Pereira, Feng Deng-Chao, P.S. Girão  
"Sensor Networks and GIS for Water Quality and Anthropogenic Factors Assessment in Estuaries", International Conference on Dependable Computing (CDC'2010), Vol. 1, pp. 531-537, Yichang, P. R. China, November 2010.

**Invited paper**

- 9.3.84** E.C. Pinheiro, O. Postolache, P.M. Girão, C. Costa  
"Identificação de sistemas na optimização do controlo de nível em regime não-linear", Proceedings ISA XIV Congresso Internacional de Automação, Sistemas

e Instrumentação, pp. , São Paulo, Brazil, November 2010.

- 9.3.85** O. Postolache, D. Richebon, J.M. Dias Pereira, P.M. Girão  
"Microcontroller based multi-sensing system for water quality assessment",  
Proceedings IMEKO TC19 Symp, Vol. I, pp. 497 - 502, Kosice, Slovakia,  
September 2010.
- 9.3.86** E.C. Pinheiro, O. Postolache, P.M. Girão  
"Assessment of Empirical Mode Decomposition Implementation in  
Cardiovascular Signals", Proceedings IMEKO TC4 Symp., Vol. I, pp. , Kosice,  
Slovakia, September 2010.
- 9.3.87** E.C. Pinheiro, O. Postolache, P.M. Girão  
"Online Heart Rate Estimation in Unstable Ballistocardiographic Records",  
Proceedings International Conf. of the IEEE Engineering in Medicine and  
Biology Society - EMBC, Buenos Aires, Argentina, Vol. I, pp. 939 - 942,  
September 2010.
- 9.3.88** E.C. Pinheiro, O. Postolache, P.M. Girão  
"Automatic Wavelet Detrending Benefits to the Analysis of Cardiac Signals  
Acquired in a Moving Wheelchair", Proceedings International Conf. of the IEEE  
Engineering in Medicine and Biology Society - EMBC, Vol. I, pp. 602 – 605,  
Buenos Aires, Argentina, September 2010.
- 9.3.89** R. Madeira, O. Postolache, P.M. Girão  
"Designing a Pervasive Healthcare Assistive Environment for the Elderly",  
Proceedings ACM International Conf. on Ubiquitous Computing - UBIComp,  
Vol. 1, pp. , Copenhagen, Denmark, September 2010.
- 9.3.90** E.C. Pinheiro, O. Postolache, P.M. Girão  
"Stationary Wavelet Transform and Principal Component Analysis Application  
on Capacitive Electrocardiography", Proceedings International Conf. on Signals  
and Electronic Systems - ICSES, pp. 37 - 40, Gliwice, Poland, September 2010.
- 9.3.91** E.C. Pinheiro, O. Postolache, P.M. Girão  
"Inconspicuous Measurements of Cardiac Function: Shielding (ECG) and

Radiating (ICG) Approaches", Proceedings Portuguese Physics for Health Summer School - PPHSS, Vol. I, pp. , Covilhã, Portugal, July 2010.

- 9.3.92** E.C. Pinheiro, O. Postolache, P.M. Girão  
"Merging Multi-Level Decompositions and Feature Extraction to Optimize Biological Data Analysis", Proceedings Portuguese Physics for Health Summer School - PPHSS, Vol. I, pp. , Covilhã, Portugal, July 2010.
- 9.3.93** E.C. Pinheiro, O. Postolache, P.M. Girão  
"Recent Advances on Unobtrusive Measurements of the Cardiovascular Function", Proceedings International Conf. on Sensing Technology - ICST, Vol. I, pp. , Lecce, Italy, June 2010.
- 9.3.94** O. Postolache, P.M. Girão, J.M. Dias Pereira  
"Smart Sensors and Intelligent Signal Processing in Water Quality Monitoring Context", Proceedings International Conf. on Sensing Technology - ICST, Vol. 1, pp. , Lecce, Italy, June 2010.
- 9.3.95** C. Costa, M.H.M. Matias, P.M. Ramos, P.M. Girão  
"A New Approach for Real Time Fault Diagnosis in Induction Motors based on Vibration Measurement", Proceedings IEEE International Instrumentation and Technology Conf. - I2MTC, Vol. 1, pp. 1164 - 1168, Austin, United States, May 2010.
- 9.3.96** J.M. Dias Pereira, O. Postolache, P.M. Girão  
"Improving Celerity of Heavy Metals Measurements", Proceedings IEEE International Instrumentation and Technology Conf. - I2MTC, Austin, United States, Vol. 1, pp. 1073 - 1077, May 2010.
- 9.3.97** V. Viegas, P.M. Girão, J.M. Dias Pereira  
"Performance Evaluation of a Web-Service-Based DMCS", Proceedings IEEE International Instrumentation and Technology Conf. - I2MTC, AUSTIN, United States, Vol. 1, pp. 1033 - 1038, May 2010.
- 9.3.98** O. Postolache, P.M. Girão, R. Madeira, G. Postolache  
"Microwave FMCW Doppler radar implementation for in-house pervasive health

care system", Proceedings IEEE International Symposium on Medical Measurements and Applications, Ottawa, Canada, Vol. 1, pp. 47 - 52, April 2010.

**9.3.99** E.C. Pinheiro, O. Postolache, P.M. Girão

"Vital Signals Monitoring Wheelchair", Doctoral Consortium of the 2010 IEEE International Conference on Networking, Sensing and Control, Chicago, USA, April 2010.

**Invited paper**

**9.3.100** P.M. Girão, O. Postolache, S.A. Antunes, F.A. Tavares

"Automated and Remote Operated System for Spectrum Monitoring and Control in Portugal", Proceedings IEEE International Conf. on Industrial Technology, Vol. , pp. 1014 - 1019, Vina del Mar, Chile, March 2010.

**9.3.101** O. Postolache, P.M. Girão, G. Postolache, J. Mendes

"Dual Channel Smart Sensor Embedded in a Wheelchair for Heart Rate and Autonomic Nervous System Monitoring", Proceedings Biomedical Engineering Conf. - BioMED, Vol. 1, pp. , Innsbruck, Austria, February 2010.

**9.3.102** E.C. Pinheiro, O. Postolache, P.M. Girão

"Implementação de Filtros Notch em Aritmética de Ponto Fixo", Proceedings Jornadas sobre Sistemas Reconfiguráveis - REC, Vol. I, pp. 91 - 96, Aveiro, Portugal, February 2010.

**9.3.103** C. Costa; P.M. Ramos, P.M. Girão

"Instrumento de Análise e Diagnóstico em Máquinas Rotativas de Indução", Proceedings Jornadas sobre Sistemas Reconfiguráveis - REC, Vol. 1, pp. , Aveiro, Portugal, February 2010.

**9.3.104** O. Postolache, P.M. Girão, J.M. Dias Pereira

"An IEEE1451.x and RFID compatibility unit for water quality monitoring", Proceedings IMEKO World Congress, pp. 2177 - 2182, Lisbon, Portugal, September 2009.

**9.3.105** V. Viegas, J.M. Dias Pereira, P.M. Girão

"Smart Transducer Block Enables Plug & Play Transducers", Proceedings

IMEKO World Congress, pp. 1452 – 1455, Lisbon, Portugal, September 2009.

- 9.3.106** E.C. Pinheiro, O. Postolache, P.M. Girão  
"Digital Notch Filters Implementation with Fixed-point Arithmetic", Proceedings IMEKO World Congress, Vol. I, pp. 491 - 496, Lisbon, Portugal, September 2009.
- 9.3.107** E.C. Pinheiro, O. Postolache, P.M. Girão  
"Compressed Sensing Implementation in Cardiac Signals", Proceedings International Workshop on Intelligent Data Acquisition and Advanced Computing Systems, Vol. I, pp. 96 - 101, Rende, Italy, September 2009.
- 9.3.108** J.M. Dias Pereira, V. Viegas, C. Banha, O. Postolache, P.M. Girão  
"Advanced Signal Processing Techniques to Measure and Classify Non-nutritive Suction of Premature and Newly Born Babies", International Workshop on Intelligent Data Acquisition and Advanced Computing Systems, Rende, Italy, Vol. 1, pp. 63 - 66, September, 2009.
- 9.3.109** V. Viegas, P.M. Girão, J.M. Dias Pereira  
"Open Controller for Distributed Instrumentation Systems", Proceedings International Workshop on Intelligent Data Acquisition and Advanced Computing Systems, pp.185 - 191, Rende, Cosenza, Italy, September 2009.
- 9.3.110** E.C. Pinheiro, O. Postolache, P.M. Girão  
"Unifying Visions on Continuous, Non-Invasive Blood Pressure Monitoring", Proceedings DARPA Workshop on Continuous, Non-Invasive Monitoring of Blood Pressure - CNIMBP, pp. , San Diego, United States, June 2009.

**Invited paper**

- 9.3.111** O. Postolache, R. Madeira, N. Correia, P.M. Girão  
"UbiSmartWheel – A Ubiquitous System with Unobtrusive Services Embedded on a Wheelchair", PETRA '09: Proceedings of the 2nd International Conference on Pervasive Technologies Related to Assistive Environments, Corfu, Greece, June 2009.
- 9.3.112** E.C. Pinheiro, O. Postolache, P.M. Girão  
"Blood Pressure and Heart Rate Variabilities Estimation Using

Ballistocardiography", Proceedings Conf. on Telecommunications - ConfTele, Vol. I, pp. 125 - 128, Santa Maria da Feira, Portugal, May 2009.

- 9.3.113** O. Postolache, P.M. Girão, S.A. Antunes, F.A. Tavares  
"Global Instrumentation Network for Broadband RF Spectrum Monitoring ", Proceedings Conf. on Telecommunications - ConfTele, Vol. 1, pp. 1 - 4, Sta Maria da Feira, Portugal, May 2009.
- 9.3.114** O. Postolache, P.M. Girão, J.M. Dias Pereira, G.F. Ferraria, N. Barroso, G. Postolache  
"Indoor Monitoring of Respiratory Distress Triggering Factors Using a Wireless Sensing Network and a Smart Phone", Proceedings IEEE Instrumentation and Measurement Technology Conf., Vol. 1, pp. 451 - 456, Singapore, Singapore, May 2009.
- 9.3.115** E.C. Pinheiro, O. Postolache, P.M. Girão  
"Pulse Arrival Time and Ballistocardiogram Application to Blood Pressure Variability Estimation", Proceedings IEEE International Workshop on Medical Measurements and Applications, Vol. I, pp. 132 - 136, Cetraro, Italy, May 2009.
- 9.3.116** O. Postolache, P.M. Girão, J. Mendes, G. Postolache  
"Unobstrusive Heart Rate and Respiratory Rate Monitor Embedded on a Wheelchair", Proceedings IEEE International Workshop on Medical Measurements and Applications, Vol. 1, pp. 83 - 88, Cetraro, Italy, May 2009.
- 9.3.117** O. Postolache, J. Mendes, G. Postolache, P.M. Girão  
"Artificial neural network approach for obesity-hypertension classification", Proceedings INSTICC International Conf. on Bio-inspired Systems and Signal Processing - Biosignals, Vol. I, pp. 514 - 520, Porto, Portugal, January 2009.
- 9.3.118** O. Postolache, M.F. Ferreira, G. Postolache, P.M. Girão  
"SOM approach in monitoring and diagnosis of obesity-hypertension", Proceedings of IMEKO TC4 Symp., pp. 928 - 933, Florence, Italy, September 2008.
- 9.3.119** J.M. Dias Pereira, O. Postolache, P.M. Girão

“Improving Accuracy and Linearity of Low-Cost Flow Meters”, Proceedings of IMEKO TC4 Symp., pp. 562 - 566, Florence, Italy, September 2008.

**9.3.120** O. Postolache, J.A. Apolonia, N.B. Beirante, P.M. Macedo, J.M. Dias Pereira, P.M. Girão

"Dolphins' Environment Assessment and Knowledge Management Using a Distributed Instrumentation and Geographic Information System", Proceedings of IMEKO TC4 Symp., pp. 454 - 459, Florence, Italy, September 2008.

**9.3.121** O. Postolache, P.M. Girão, J.M. Dias Pereira

"Mobile Solutions for Remote Environmental Monitoring Systems", Proceedings of IMEKO TC19 Symposium, pp. , Budapest, Hungary, September 2008.

**9.3.122** O. Postolache, P.M. Girão, J.M. Dias Pereira

"Underwater Acoustic Signals Assessment Based On Advanced Signal Analysis and Neural Network Classification", Proceedings of IMEKO TC19 Symposium, pp. , Budapest, Hungary, September 2008.

**9.3.123** O. Postolache, P.M. Girão, G.P. Patricio, J.S. Sacramento, P.M. Macedo, J.M. Dias Pereira

"Distributed Instrumentation and Geographic Information System for Dolphins' Environment Assessment", Proceedings of IEEE International Instrumentation and Technology Conf. - I2MTC, Vol. I, pp. 1777 - 1782, Victoria, Canada, May 2008.

**9.3.124** V. Viegas, J.M. Dias Pereira, P.M. Girão

"Next Generation Application Processor Based on the IEEE 1451.1 Standard and Web Services", Proc. IEEE International Instrumentation and Technology Conf. - I2MTC, Victoria, Canada, Vol. I, pp. 405 - 410, May, 2008.

**9.3.125** O. Postolache, Pedro Silva Girão, P. Sinha, A. Anand, G. Postolache

"Health Status Monitor Based on Embedded Photoplethysmography and Smart Phone", Proceedings of IEEE International Workshop on Medical Measurements and Applications, Vol. I, pp. 39 - 42, Ottawa, Canada, May 2008.

**9.3.126** O. Postolache, H.G. Ramos, P.M. Girão, J.M. Dias Pereira

"A Practical Approach on Water Quality Monitoring Based on Distributed Measurement System and Intelligent Signal Processing", Proceedings of UPC International Workshop on Marine Technology, MARTECH 2007, Vol. I, pp. 1-5, Vilanova i la Geltru, Spain, November 2007.

**Invited paper.**

**9.3.127** Pedro Silva Girão, Octavian Postolache, José Miguel Dias Pereira  
"Tactile Sensors and their Use in Industrial, Robotic and Medical Applications", Proceedings of IMEKO 20<sup>th</sup> TC3 & 3<sup>rd</sup> TC16 & 1<sup>st</sup> TC22 International Conference, pp. , Mérida, México, November 2007.

**9.3.128** Pedro Silva Girão, G.A. Enache  
"Wireless Sensor Networks: State of the Art and Future Trends", Actas da 2<sup>a</sup> Conferência Nacional da Sociedade Portuguesa de Metrologia, Funchal, Madeira, October 2007, CD published.

**Invited paper.**

**9.3.129** Pedro Silva Girão, G.A. Enache  
"Representation and Classification of Multidimensional Data Using Self-Organizing Maps", Actas da 2<sup>a</sup> Conferência Nacional da Sociedade Portuguesa de Metrologia, Funchal, Madeira, October 2007, CD published.

**9.3.130** O. Postolache, J.M. Dias Pereira, P.M. Girão  
"Optical Fiber Based Turbidity Sensing System", IMEKO TC19 Symposium, Vol. II, pp. 71 - 75, Iasi, Romania, September, 2007.

**9.3.131** O. Postolache, P.S. Girão, J.M. Dias Pereira, F. Alegria  
"Wireless Embedded Air Multiparameter Measuring System", Proceedings IMEKO TC19 Symposium, Vol. II, pp. 41-46, Iasi, Romania, September 2007.

**9.3.132** J.M. Dias Pereira, O. Postolache, R. Salgado, P. Silva Girão  
"Voltammetry-Based Automated System for In-situ and Online Measurement of Heavy Metals Concentration in Water", Proceedings IMEKO TC4 Symposium, Vol. 1, pp. 85-90, Iasi, Romania, September 2007.

**9.3.133** Octavian Postolache, Miguel Dias Pereira, Pedro Girão

“Intelligent Distributed Virtual System for Underwater Acoustic Source Localization and Sounds Classification”, Proceedings of the 4<sup>th</sup> IEEE Workshop on Intelligent Data Acquisition and Advanced Computing Systems: Technology and Applications (IDAACS'2007), pp. 132-135, Dortmund, Germany September 2007.

**9.3.134** O. Postolache, J.M. Pereira, P. Girão

“Distributed Air Quality Monitoring Based on Bluetooth Sensing Nodes and Virtual TEDS”, Proceedings of Conference on Electronic Measurement & Instruments - ICEMI, Vol. 4, pp. 41 - 46, Xi'An, P. R. China, August 2007.

**9.3.135** J.M. Dias Pereira, O. Postolache, F. Dengchao, V. Viegas, P.M. Girão

"Advantages of PWM-A/D Conversion Techniques in Smart Sensing Applications", Proceedings of Conference on Electronic Measurement & Instruments - ICEMI, Vol. 1, pp. 15-20, Xi'An, P. R. China, August 2007.

**9.3.136** Pedro Silva Girão

“Human Movements and Prosthetics Analysis Using Tactile Sensors”, Proceedings of IMEKO TC18 The 3<sup>rd</sup> International Symposium on Measurement, Analysis and Modeling of Human Functions (ISHF 2007), pp. 27-32, Lisbon, Portugal, June 2007.

**Invited paper.**

**9.3.137** Octavian Postolache, Pedro Girão, Miguel Dias Pereira

“Distributed Passive Sonar System for Performance Evaluation of Low Depth Underwater Acoustic Source Localization Using Relative Time Delay Based Techniques”, Proceedings of Conference on Telecommunications - ConfTele, Vol. I, pp. 251-254, Peniche, Portugal, May 2007.

**9.3.138** Ricardo Queirós, Vaclav Matz, Radislav Smid, Pedro Silva Girão, António Cruz Serra

“Ultrasonic Thickness Estimation Using Cross-Correlation and Phase-Shift”, Proceedings Conf. on Telecommunications - ConfTele, Peniche, Portugal, May 2007, CD published.

- 9.3.139** G. Postolache, O. Postolache, P. Girão  
“New Device for Assessment of Autonomous Nervous System Functioning in Psychophysiology”, Proceedings of IEEE International Workshop on Medical Measurements and Applications, Vol. I, pp. 95-99, Warsaw, Poland, May 2007.  
**Invited paper.**
- 9.3.140** J.M. Dias Pereira, O. Postolache, P.S. Girão  
“A Smart and Portable Solution for Heavy Metals Concentration Measurements”, Proceedings of IEEE Instrumentation and Measurement Technology Conference, pp. 100-105, Warsaw, Poland, CD published, May 2007.
- 9.3.141** O. Postolache, P. Girão, M. Pereira  
“Underwater Acoustic Source Localization Based on Passive Sonar and Intelligent Processing”, Proceedings of IEEE Instrumentation and Measurement Technology Conference, Vol. I, pp. 175-179, Warsaw, Poland, May 2007.
- 9.3.142** O. Postolache, P. Silva Girão, G. Postolache, M. Dias Pereira  
“Vital Signs Monitoring System Based on EMFi Sensors and Wavelet Analysis”, Proceedings of IEEE Instrumentation and Measurement Technology Conference, Vol. I, pp. 3-7, Warsaw, Poland, May 2007.
- 9.3.143** O. Postolache, P.S. Girão, G. Postolache  
“New Approach on Cardiac Autonomic Control Estimation Based on BCG Processing”, Proceedings of IEEE Canadian Conference on Electrical & Computer, Vol. I, pp. 876-879, Vancouver, Canada, April 2007.
- 9.3.144** Francisco Alegria and Pedro Silva Girão  
“Vehicle Plate Recognition for Wireless Traffic Control and Law Enforcement System”, Proceedings of the IEEE International Conference on Industrial Technology (ICIT 2006), pp. 1800-1804, Mumbai, India, December 2006.
- 9.3.145** Pedro Silva Girão, Francisco Alegria, José Manuel Viegas, Baichuan Lu, and João Vieira  
“Wireless System for Traffic Control and Law Enforcement”, Proceedings of the IEEE International Conference on Industrial Technology (ICIT 2006), pp. 1768-

1770, Mumbai, India, December 2006.

- 9.3.146** O. Postolache, J.M. Dias Pereira, P. Silva Girão, H. Ramos  
“Smart Flexible Turbidity Sensing Based on Embedded Neural Network”,  
Proceedings of IEEE Sensors 2006, pp. 658-661, Daegu, Korea, October 2006.
- 9.3.147** J. Dias Pereira, Carlos Banha, O. Postolache, P. Silva Girão  
“Improving Accelerometers Performance Using Smart Sensing Techniques”,  
Proceedings of IEEE Sensors 2006, pp. 654-657, Daegu, Korea, October 2006.
- 9.3.148** Pedro Silva Girão, Octavian Postolache, José Dias Pereira  
“Modelling, Classification and Data Mining Using Artificial Neural Network  
Based Techniques”, Proceedings AMSE International Conference 2006, MS’06,  
pp. , Bahia Blanca, Argentina, September 2006.
- 9.3.149** Octavian Postolache, Pedro Silva Girão, Miguel Dias Pereira, Helena Ramos  
“Water Quality Sensors Calibration System Based on Reconfigurable FPGA  
Technology”, Proceedings XVIII IMEKO World Congress, “Metrology for a  
Sustainable Development”, pp. , Rio de Janeiro, Brazil, September 2006.
- 9.3.150** O. Postolache, P. Silva Girão, M.D. Pereira  
“PDA Based Virtual Measuring System for Broadband Air Quality Monitoring”,  
Proceedings XVIII IMEKO World Congress, “Metrology for a Sustainable  
Development”, pp. 292 - 294, Rio de Janeiro, Brazil, September 2006.
- 9.3.151** O.A. Postolache, P.S. Girão, M.D. Pereira, M. Figueiredo  
“Distributed Virtual System for Dolphins’ Sound Acquisition and Time-  
Frequency Analysis”, Proceedings XVIII IMEKO World Congress, “Metrology  
for a Sustainable Development”, pp. , Rio de Janeiro, Brazil, September 2006.
- 9.3.152** R. Queirós, R.C. Martins, P.S. Girão, A. Cruz Serra  
“A New Method for High Resolution Ultrasonic Ranging in Air”, Proceedings  
XVIII IMEKO World Congress, “Metrology for a Sustainable Development”,  
pp. , Rio de Janeiro, Brazil, September 2006.
- 9.3.153** Helena Geirinhas Ramos, Octavian Postolache, Miguel Pereira, Pedro Silva Girão  
“Embedding IEEE 1451.4 Smart Sensing Nodes in a Wireless Air Quality

Monitoring Network”, Proceedings of The 49<sup>th</sup> IEEE International Midwest Symposium on Circuits and Systems, pp. , San Juan, Puerto Rico, August 2006.

- 9.3.154** Octavian Postolache, José Miguel Dias Pereira and Pedro Silva Girão  
“Smart Wireless Tipping-Bucket Rain Gauge - Measurement and Automatic Dynamic Calibration”, Proceedings of the Third International Conference on Signal Processing, Systems Modeling and Control (ICINCO 2006), pp. 205-209, Setúbal, Portugal, August 2006.
- 9.3.155** Octavian Postolache, Jose Miguel Dias Pereira and Pedro Silva Girão  
“Embedded FPGA Solution for Water Quality Monitoring System - Calibration and Measurement”, Proceedings of the Third International Conference on Signal Processing, Systems Modeling and Control (ICINCO 2006), pp. 154-160, Setúbal, Portugal, August 2006.
- 9.3.156** Octavian Postolache, Gabriela Postolache, Pedro Silva Girão  
“Non-invasive Mobile Homeostasis Instrument”, Proceedings IEEE International Workshop on Medical Measurement and Applications (MeMeA 2006), pp. 94-97, Benevento, Italy, April 2006.
- 9.3.157** Vítor Viegas, J. M. Dias Pereira, P. Silva Girão  
“IEEE 1451.1 Standard and XML Web Services: a Powerful Combination to Build Distributed Measurement and Control Systems”, Proceedings 2006 IEEE Instrumentation and Measurement Technology Conference, pp. 2373-2377, Sorrento, Italy, April 2006.
- 9.3.158** José Pereira, Octavian Postolache and Pedro Girão  
“A Low-Cost Tide Measurement System for Water Quality Assessment”, Proceedings 2006 IEEE Instrumentation and Measurement Technology Conference, pp. 2226-2230, Sorrento, Italy, April 2006.
- 9.3.159** Gabriela Postolache, Octavian Postolache and Pedro Silva Girão  
“Wavelet and Fourier analysis of short-term rabbit’s cardiovascular oscillation”, Proceedings 2006 IEEE Instrumentation and Measurement Technology Conference, pp. 1801-1806, Sorrento, Italy, April 2006.

- 9.3.160** Octavian Postolache, José Pereira and Pedro Girão  
“Real-Time Sensing Channel Modelling Based on an FPGA and Real-Time Controller”, Proceedings 2006 IEEE Instrumentation and Measurement Technology Conference, pp. 557-562, Sorrento, Italy, April 2006.
- 9.3.161** Ricardo Queirós, Pedro Girão and Antonio Serra  
“Cross-Correlation and Sine-Fitting Techniques for High Resolution Ultrasonic Ranging”, Proceedings 2006 IEEE Instrumentation and Measurement Technology Conference, pp. 552-556, Sorrento, Italy, April 2006.
- 9.3.162** Pedro Silva Girão  
“Novos Caminhos da Metrologia”, 1ª Conferência Nacional da Sociedade Portuguesa de Metrologia, Lisbon, Portugal, November 2005, CD published.  
**Invited paper.**
- 9.3.163** Ricardo Queirós, Pedro Silva Girão, António Cruz Serra  
“Single-Mode Piezoelectric Ultrasonic Transducer Equivalent Circuit Parameter Calculation and Optimization using Experimental Data”, Proceedings IMEKO TC-4 14<sup>th</sup> Symposium on New Technologies in Measurement and Instrumentation and 10<sup>th</sup> Workshop on ADC Modelling and Testing, Vol. II, pp. 468-471, Gdynia, Poland, September 2005.
- 9.3.164** O. Postolache, L. Silva Carvalho, G. Postolache, P. Silva Girão  
“Portable Instrument for Autonomic Nervous System Analysis”, Proceedings IMEKO TC-4 14<sup>th</sup> Symposium on New Technologies in Measurement and Instrumentation and 10<sup>th</sup> Workshop on ADC Modelling and Testing, Vol. I, pp. 312-317, Gdynia, Poland, September 2005.
- 9.3.165** Octavian Postolache, Pedro Girão, Helena Ramos, Miguel Dias Pereira  
“Auto Calibration of Stand-alone Field Operating Sensors for Distributed Water Quality Monitoring Systems”, Proceedings IMEKO TC-4 14<sup>th</sup> Symposium on New Technologies in Measurement and Instrumentation and 10<sup>th</sup> Workshop on ADC Modelling and Testing, Vol. I, pp. 75-80, Gdynia, Poland, September 2005.
- 9.3.166** J.M. Dias Pereira, O. Postolache, P. Silva Girão

“A Self-Adaptable Method to Optimize the Performance of Frequency-to-Code Conversion Based Measurement Systems”, Proceedings of the Third IEEE Workshop on Intelligent Data Acquisition and Advanced Computing Systems: Technology and Applications (IDAACS’ 2005), pp. 295-298, Sofia, Bulgaria, September 2005.

**9.3.167** Pedro Silva Girão, José Miguel Dias Pereira, Octavian Postolache

“Multisensor Data Fusion and its Application to Decision Making”, VII Advanced Mathematical and Computational Tools in Metrology, AMCTM 2005, Caparica, Portugal, June 2005.

**Invited paper.**

**9.3.168** Vítor Viegas, J.M. Dias Pereira, P. Silva Girão

“Using a Commercial Framework to Implement and Enhance the IEEE 1451.1 Standard”; Proceedings IEEE Instrumentation and Measurement Technology Conference (IMTC’2005), Vol. III, pp. 2136-2141, Ottawa, Canada, May 2005.

**9.3.169** J.M. Dias Pereira, O. Postolache, P. Silva Girão

“Adaptive Self-Calibration Algorithm for Smart Sensors Linearization”, Proceedings IEEE Instrumentation and Measurement Technology Conference (IMTC’2005), Vol. I, pp. 648-652, Ottawa, Canada, May 2005.

**9.3.170** Helena Ramos, O. Postolache, M. Pereira, P. Girão

“IEEE 1451 Correction Engine to Temperature-Compensation of Magnetoresistive Transducers”, Proceedings IEEE Instrumentation and Measurement Technology Conference (IMTC’2005), Vol. I, pp. 560-564, Ottawa, Canada, May 2005.

**9.3.171** O. Postolache, M. Dias Pereira, P. Silva Girão

“Smart Sensor Network for Air Quality Monitoring Applications”, Proceedings IEEE Instrumentation and Measurement Technology Conference (IMTC’2005), Vol. I, pp. 537-542, Ottawa, Canada, May 2005.

**9.3.172** J.M. Dias Pereira, O. Postolache, P. Silva Girão

“A Digitally Programmable A/D Converter for Smart Sensors Applications”,

Proceedings IEEE Instrumentation and Measurement Technology Conference (IMTC'2005), Vol. I, pp. 156-159, Ottawa, Canada, May 2005.

**9.3.173** Pedro M. B. Silva Girão

“An Overview of the Activities of the IT Instrumentation and Measurement Group”, 5<sup>th</sup> Conference on Telecommunications (Conftele 2005), 6-8 April 2005, Aveiro, Portugal, CD published.

**Invited paper.**

**9.3.174** Octavian Postolache, Pedro Girão, Fernando Tavares

“Automation and Remote Operation of RF Spectrum Monitoring Systems”, 5<sup>th</sup> Conference on Telecommunications (Conftele 2005), 6-8 April 2005, Aveiro, Portugal, CD published.

**9.3.175** Octavian Postolache, Miguel Dias Pereira, Carlos Banha, Pedro Girão

“Heavy Metal Concentration Measurement Based on Virtual Instrumentation”, 5<sup>th</sup> Conference on Telecommunications (Conftele 2005), 6-8 April 2005, Aveiro, Portugal, CD published.

**9.3.176** O. Postolache, P. Girão, M. Pereira, Helena Ramos

“Intelligent Processing of the Dynamic Response of Sensors for Water Quality Monitoring”, IEEE Third International Conference on Systems, Signals, Devices (SSD'2005); Summaries: pp. 227; Proceedings: Volume IV Sensors, Circuits & Instrumentation Systems, Sousse, Tunísia, March 2005, ISBN 9973-959-01-9/ © 2005 / 9885 IEEE, CD published.

**9.3.177** Helena Ramos, L. Gurriana, O. Postolache, M. Pereira, P. Girão

“Development and Characterization of a Conductivity Cell for Water Quality Monitoring”, IEEE Third International Conference on Systems, Signals, Devices (SSD'2005); Summaries: pp. 225-226; Proceedings: Volume IV Sensors, Circuits & Instrumentation Systems, Sousse, Tunísia, March 2005, ISBN 9973-959-01-9/ © 2005 / 9885 IEEE, CD published.

**9.3.178** J.M. Dias Pereira, P. Silva Girão, O. Postolache

“Adaptive Analog-to-Digital Conversion Using Self-Dithering in Data

Acquisition Systems”, Proceedings of 11<sup>th</sup> IEEE International Conference on Electronic Circuits and Systems (ICECS 2004), Vol. 1, pp. 627-630, Tel-Aviv, Israel, December 2004.

- 9.3.179** Helena Ramos, M. Pereira, V. Viegas, O. Postolache, P. Girão  
“A Centronics Based Transducer Independent Interface (TII) Fully Compliant with 1451.2 Std.”, Proceedings of IMEKO TC-4 13th International Symposium on Measurements for Research and Industry Applications and the 9th European Workshop on ADC Modelling and Testing, Volume 2, pp. 555-560, Athens, Greece, September/October, 2004.
- 9.3.180** G. Postolache, I. Rocha, L. Silva Carvalho, O. Postolache, P. Girão  
“HRV and BPV neural network model with wavelet based algorithm calibration”, Proceedings of IMEKO TC-4 13th International Symposium on Measurements for Research and Industry Applications and the 9th European Workshop on ADC Modelling and Testing, Volume 2, pp. 451-456, Athens, Greece, September/October, 2004.
- 9.3.181** M. Dias Pereira, O. Postolache, P. Girão, Helena Ramos  
“Smart oil and conductivity sensor for water quality monitoring”, Proceedings of IMEKO TC-4 13th International Symposium on Measurements for Research and Industry Applications and the 9th European Workshop on ADC Modelling and Testing, Volume 2, pp. 417-422, Athens, Greece, September/October, 2004.
- 9.3.182** Helena Ramos, P. Girão, O. Postolache, M. Pereira  
“Distributed Water Quality Measurement System Based on SDI-12”, Proceedings of IEEE Africon 2004, Volume 1, pp. 57-60, Gaborone, Botswana, September 2004.
- 9.3.183** O. Postolache, J.M. Dias Pereira, P.M. Girão, H.G. Ramos  
“Matching Ion Selective Electrode Response Characteristics Using Fuzzy-Neural Network”, Proceedings MultiConference on Systemics, Cybernetics and Informatics, Vol. XIII, pp. 135 - 139, Orlando, USA, July, 2004.
- 9.3.184** O. Postolache, J.M. Dias Pereira, P.M. Girão, H.G. Ramos

“A Temperature Compensated Conductivity Sensor with Auto-Calibration Capabilities”, Proceedings MultiConference on Systemics, Cybernetics and Informatics, Vol. XIII, pp. 74 - 79, Orlando, USA, July, 2004.

**9.3.185** O. Postolache, M. Dias Pereira, P. Girão, H. Ramos

“Water Quality Data Processing Using Fuzzy Neural Networks and Kohonen Self Organizing Maps”, Proceedings 10<sup>th</sup> IMEKO TC7 International Symposium on Advances of Measurement Science, Volume 1, pp. 509-513, Saint-Petersburg, Russia, June/July 2004.

**9.3.186** M. Dias Pereira, O. Postolache, P. Girão

“Improving Performance of Encoders Based Systems Using Wavelet Techniques”, Proceedings 10<sup>th</sup> IMEKO TC7 International Symposium on Advances of Measurement Science, Volume 1, pp. 238-242, Saint-Petersburg, Russia, June/July 2004.

**9.3.187** G. Postolache, Isabel Rocha, L. Silva Carvalho, O. Postolache, P. Silva Girão

“A Wavelet-based Approach to Monitor Baroreceptor Function Tests in Rats”, Proceedings IEEE IMTC 2004 – Instrumentation and Measurement Technology Conference, Vol. 1, pp. 844-849, Como, Italy, May 2004.

**9.3.188** O. Postolache, P. Girão, M. Pereira, C. Banha, H. Ramos

“Dew Point and Relative Humidity Smart Measuring System”, Proceedings IEEE IMTC 2004 – Instrumentation and Measurement Technology Conference, Vol. 1, pp. 82-86, Como, Italy, May 2004.

**9.3.189** J.M.D. Pereira, O. Postolache, P.S. Girão, H. Ramos

“SDI-12 Based Turbidity Measurement System with Field Calibration Capability”, Proceedings 2004 IEEE Canadian Conference on Electrical and Computer Engineering (CCECE 2004), pp. 1975-1980, Niagara Falls, Canada, May 2004.

**9.3.190** J.M. Dias Pereira, O. Postolache, P. Silva Girão

“HART Protocol Analyser Based in LabVIEW”, Proceedings of the Second IEEE International Workshop on Intelligent Data Acquisition and Advanced Computing Systems: Technology and Applications (IDAACS'2003), pp. 174-

176, Lviv, Ukraine, September 2003.

- 9.3.191** O. Postolache, M. Pereira, C. Banha, P. Girão  
“Smart Wireless System for Pollution of Rivers and Estuaries”, Proceedings 6<sup>th</sup> International Conference on Electronic Measurement and Instruments (ICEMI'2003), Vol. 2, pp. 1139-1143, Taiyuan, P. R. China, August 2003.
- 9.3.192** J.M. Dias Pereira, O. Postolache, P. Silva Girão, Helena Ramos  
“A Remote Measurement and Control Solution for Distributed HART Systems”, Proceedings 6<sup>th</sup> International Conference on Electronic Measurement and Instruments (ICEMI'2003), Vol. 1, pp. 799-802, Taiyuan, P. R. China, August 2003.
- 9.3.193** Octavian Postolache, Pedro Girão, Fernando Tavares  
“Remote Operation of Instruments and Measuring Systems”, Proceedings of the 4<sup>th</sup> Conference on Telecommunications (Conftele 2003), pp. 579-582, Aveiro, Portugal, June 2003.
- 9.3.194** Octavian Postolache, Pedro Girão, Fernando Tavares  
“Remote Controlled Antenna Switching Unit”, Proceedings of the 4<sup>th</sup> Conference on Telecommunications (Conftele 2003), pp. 161-164, Aveiro, Portugal, June 2003.
- 9.3.195** O. Postolache, P. Girão, Helena Ramos, M. Pereira  
“A Practical Approach to Ion Selective Electrodes Performance in Static and Dynamic Conditions”, Proceedings XVII IMEKO World Congress, pp. 630-634, Dubrovnik, Croatia, June 2003.
- 9.3.196** M. Dias Pereira, O. Postolache, P. Girão, Helena Ramos  
“Replacing HART Hand-held Terminals by PC Based Virtual Instruments”, Proceedings XVII IMEKO World Congress, pp. 620-624, Dubrovnik, Croatia, June 2003.
- 9.3.197** Helena Ramos, O. Postolache, M. Pereira, P. Girão  
“An Application of the IEEE 1451.2 Correction Engine in an Integrated Sensing Structure”, Proceedings XVII IMEKO World Congress, pp. 609-613, Dubrovnik,

Croatia, June 2003.

- 9.3.198** Francisco Alegria, Pedro Girão, Vladimir Haasz, António Serra  
“Performance of Data Acquisition Systems From the User’s Point of View”,  
Proceedings IEEE IMTC 2003 – Instrumentation and Measurement Technology  
Conference, Vol. 2, pp. 940-945, Vail, Colorado, USA, May 2003.  
**Invited paper.**
- 9.3.199** Helena Ramos, M. Pereira, V. Viegas, O. Postolache, P. Girão  
“A Virtual Instrument to Test Smart Transducer Interface Modules (STIMs)”,  
Proceedings IEEE IMTC 2003 – Instrumentation and Measurement Technology  
Conference, Vol. 1, pp. 772-775, Vail, Colorado, USA, May 2003.
- 9.3.200** O. Postolache, P. Girão, M. Pereira, and Helena Ramos  
“Self-Organizing Maps Application in a Remote Water Quality Monitoring  
System”, Proceedings IEEE IMTC 2003 – Instrumentation and Measurement  
Technology Conference, Vol. 1, pp. 529-533, Vail, Colorado, USA, May 2003.
- 9.3.201** Gabriela Postolache, I. Rocha, L. Silva Carvalho, O. Postolache, P. Girão, H.  
Ramos  
“A Practical Approach of Wavelets Analysis to Follow Transitory Modulation of  
the Cardiac Autonomic System after Ethanol Administration”, Proceedings IEEE  
IMTC 2003 – Instrumentation and Measurement Technology Conference, Vol. 1,  
pp. 218-222, Vail, Colorado, USA, May 2003.
- 9.3.202** G. Postolache, L. Silva Carvalho, I. Rocha, O. Postolache, P. Silva Girão  
“A Wavelet-Based Method for Estimation of the Autonomic Balance after  
Experimentally Drug Administration”, Proceedings 2003 IEEE Canadian  
Conference on Electrical and Computer Engineering (CCECE 2003), Vol. III,  
pp. 2083-2086, Montreal, Canada, May 2003.
- 9.3.203** O. Postolache, P.M. Girão, J. M. Dias Pereira, H.G. Ramos  
"Wireless Water Quality Monitoring System Based on Field Point Technology  
and Kohonen Maps", Proceedings 2003 IEEE Canadian Conference on Electrical  
and Computer Engineering (CCECE 2003), Vol. I, pp. 211-216, Montreal,

Canada, May 2003.

- 9.3.204** O. Postolache, P. Girão, M. Pereira, H. Ramos  
“Increasing Ion Selective Electrodes Performance Using Neural Networks”, IEEE SICON/02 Sensors for Industry Conference Proceedings, pp. 127-132, Houston, Texas, USA, November 2002.
- 9.3.205** M. Pereira, O. Postolache, P. Girão, H. Ramos  
“Colored Light-to-Voltage Converters Based Absorbance Meter”, IEEE SICON/02 Sensors for Industry Conference Proceedings, pp. 2-7, Houston, Texas, USA, November 2002.
- 9.3.206** P. Girão, O. Postolache, M. Pereira, H. Ramos  
“Accuracy Increase of Multi-Sensor Measuring System Using Sensors Data Fusion”, Proceedings 12<sup>th</sup> IMEKO TC4 International Symposium, Part 2, pp. 442-447, Zagreb, Croatia, September 2002.
- 9.3.207** C. Temneanu, O. Postolache, P. Girão, J. Pereira  
“Fuzzy Modeling of Measurement Data in Water Quality Assessment”, Proceedings 12<sup>th</sup> IMEKO TC4 International Symposium, Part 2, pp. 396-400, Zagreb, Croatia, September 2002.
- 9.3.208** J. Pereira, O. Postolache, P. Girão, H. Ramos  
“Minimising Errors Due to Non-Simultaneous Sampling of Voltage and Current in Digital Power Measurement Systems”, Proceedings 12<sup>th</sup> IMEKO TC4 International Symposium, Part 1, pp. 307-310, Zagreb, Croatia, September 2002.
- 9.3.209** O. Postolache, P. Girão, M. Pereira, H. Ramos  
“An Internet and Microcontroller based Remote Operation Multi-Sensor System for Water Quality Monitoring”, Proceedings of IEEE Sensors 2002, Orlando, USA, June 2002, CD published.
- 9.3.210** O. Postolache, P. Girão, M. Pereira, H. Ramos  
“An IR Turbidity Sensor: Design and Application”, Proceedings of IEEE Instrumentation and Measurement Technology Conference (IMTC 2002), pp. 535-539, Anchorage, AK, USA, May 2002.

- 9.3.211** M. Pereira, O. Postolache, P. Girão  
“A Temperature Compensated Power Measurement System Based on a Hall Effect Sensor”, Proceedings of 2002 IEEE Canadian Conference on Electrical and Computer Engineering (CCECE 2002), Winnipeg, pp. 500-503, Canada, May 2002.
- 9.3.212** O. Postolache, M. Pereira, P. Girão  
“An Intelligent Turbidity and Temperature Sensing Unit for Water Quality Assessment”, Proceedings of 2002 IEEE Canadian Conference on Electrical & Computer Engineering (CCECE 2002), pp. 494-499, Winnipeg, Canada, May 2002.
- 9.3.213** J. M. Dias Pereira, O. Postolache, P. Silva Girão, A. Cruz Serra  
“A Smart Capacitive Transducer with Autocalibration Capabilities”, Proceedings of the Fifth Conference on Electronic Measurement & Instruments (ICEMI'2001), pp. 25-29, Guilin, P. R. China, November 2001.
- 9.3.214** O. Postolache, P. Silva Girão, H. Geirinhas Ramos, M. Dias Pereira  
“A Distributed Virtual Instrument for Indoor Air Monitoring”, Proceedings of the Fifth Conference on Electronic Measurement & Instruments (ICEMI'2001), pp. 6-10, Guilin, P. R. China, November 2001.
- 9.3.215** J. M. Dias Pereira, O. Postolache, P. Silva Girão  
“PWM-A/D Conversion: A Flexible and Low-Cost Solution for Transducer Linearization”, Proceedings of SICON/01, First ISA/IEEE Sensors for Industry Conference, pp. 258-263, Rosemont, Illinois, USA, November 2001.
- 9.3.216** O. Postolache, M. Pereira, P. Girão  
“Laser Based Smart Displacement Sensor”, Proceedings of SICON/01, First ISA/IEEE Sensors for Industry Conference, pp. 149-154, Rosemont, Illinois, USA, November 2001.
- 9.3.217** O. Postolache, P. Girão, M. Pereira, M. Cretu, C. Fosalau  
“Air Contaminants Measurement Based on Neural Processing and PIC16F877 Hardware Support”, 10th International Metrology Congress, pp. , Saint-Louis,

France, October 2001.

**9.3.218** P. Girão, O. Postolache, and M. Pereira

“LASER Based Optical Linear Displacement Transducer with Light Fluctuation Compensation”, Actas do 6º Seminário Anual de Automática, Electrónica Industrial e Instrumentacion, pp. , Matanzas, Cuba, Septiembre 2001.

**9.3.219** O. Postolache, P. Girão, H. Ramos, M. Pereira, C. Fosalau, M. Cretu

“A Neural Virtual Instrument for Turbidity Measurement”, Actas do 6º Seminário Anual de Automática, Electrónica Industrial e Instrumentacion, pp. , Matanzas, Cuba, Septiembre 2001.

**9.3.220** J.M. Dias Pereira, O. Postolache, A. Cruz Serra, P. Silva Girão

“Extending Digital Input/Output Capabilities of Low-cost and Non-linear A/D Conversion”, Proceedings of the 6th Euro Workshop on ADC Modelling and Testing, pp. 101-105, Lisbon, Portugal, September 2001.

**9.3.221** O. Postolache, P. Silva Girão, J.M. Dias Pereira, C. Fosalau

“Microcontroller-based Data Processing for Non-linear Measuring Sensors”, Proceedings of the 11th IMEKO TC-4 Symposium “Trends in Electrical Measurement and Instrumentation”, pp. 428-432, Lisbon, Portugal, September 2001.

**9.3.222** Octavian Postolache, Pedro Girão, Miguel Pereira

“Neural Networks in Automated Measurement Systems: State of the Art”, Proceedings of IEEE International Joint Conference on Neural Networks (IJCNN’01), Vol. 3-4, pp. 2310-2315, Washington, DC, USA, July 2001.

**Invited paper.**

**9.3.223** Octavian Postolache, Pedro Girão, Miguel Pereira

“Neural Network Application in a Carbon Monoxide Measurement System”, Proceedings of IEEE International Joint Conference on Neural Networks (IJCNN’01), Vol. 3-4, pp. 2076-2081, Washington, DC, USA, July 2001.

**9.3.224** Octavian Postolache, Pedro Girão, Miguel Pereira

“A Study of a Neural Processing Application in Multitransducer Systems”, Actas

das 7<sup>as</sup> Jornadas Hispano Lusas de Ingenieria Eléctrica, Volumen IV, pp. 153-158, Madrid, Espana, Julio 2001.

**9.3.225** Octavian Postolache, Pedro Girão, Miguel Pereira

“An Intelligent CO Sensor Using Neural Networks”, Actas das 7<sup>as</sup> Jornadas Hispano Lusas de Ingenieria Eléctrica, Volumen IV, pp. 147-152, Madrid, Espana, Julio 2001.

**9.3.226** O. Postolache, M. Pereira, P. Girão

“A Linear Displacement Tilt Self-Corrected Transducer Based on a Discrete Position Detector”, Proceedings of 3th Conference on Telecommunications (Conftele 2001), pp. 438-441, Figueira da Foz, Portugal, April 2001.

**9.3.227** J.M. Dias Pereira, O. Postolache, A. Cruz Serra, P. Silva Girão

“A Discrete and Cost Effective ADC Solution Based on a Pulse-Width Modulation Technique”, Proceedings of 3th Conference on Telecommunications (Conftele 2001), pp. 153-156, Figueira da Foz, Portugal, April 2001.

**9.3.228** Pedro M. B. Silva Girão

“Sistema Português da Qualidade: Presente e Futuro”, Proceedings of the II Brazilian Congress of Metrology, Generalist Papers, pp. 62-69, S. Paulo, Brazil, December 2000.

**Invited paper.**

**9.3.229** Pedro M. B. Silva Girão

“Acreditação de Laboratórios de Ensaios e de Calibração Segundo a Norma ISO/IEC 17025”, Proceedings of the II Brazilian Congress of Metrology, Metrochem-2000/Enlab-2000, pp. 22-28, S. Paulo, Brazil, December 2000.

**Invited paper.**

**9.3.230** J.M. Dias Pereira, A. Cruz Serra and P. Girão

“Flexible ADC: A Dither and Oversampling Based Solution to Improve the Performance of ADC Systems”, Proceedings of XVI IMEKO World Congress, Volume X, pp. 103-108, Vienna, Austria, September 2000.

**9.3.231** O. Postolache, M. D. Pereira, P. Girão and C. Fosalau

“Application of Neural Structures in Water Quality Measurements”, Proceedings of XVI IMEKO World Congress, Volume IX, pp. 353-358, Vienna, Austria, September 2000.

**9.3.232** O. Postolache, M. D. Pereira, P. Girão and M. Cretu

“An Optical Displacement Meter Based on a Light-to-Frequency Converter”, Proceedings of XVI IMEKO World Congress, Volume II, pp. 265-269, Vienna, Austria, September 2000.

**9.3.233** Pedro M. B. Silva Girão

“Metrological Quality of Measured and Evaluated Values Using Automated Measuring Systems”, IEEE Conference on Precision Electromagnetic Measurements (CPEM'2000) Digest, pp. 604-605, Sydney, Australia, May 2000.

**9.3.234** O. Postolache, P. Girão, Helena Ramos, M. Cretu, C. Fosala

“Sistem Multifibra Optica Bidirectionala cu Aplicatii in Masurarea Deplasarilor”, Proceedings of the 2nd International Conference of Electromechanical Systems (A Doua Conferinta Internationala de Sisteme Electromecanice SIELMEC'99), Volumul III, pp. 107-110, Chisinau, Republica Moldova, Octombrie 1999.

**9.3.235** O. Postolache, P. Girão, Helena Ramos, M. Cretu, C. Fosala

“O Aplicatie a Microcontrolerului PIC12C509 in Masurarea Deplasarilor”, Proceedings of the 2nd International Conference of Electromechanical Systems (A Doua Conferinta Internationala de Sisteme Electromecanice SIELMEC'99), Volumul III, pp. 105-106, Chisinau, Republica Moldova, Octombrie 1999.

**9.3.236** O. Postolache, P. Silva Girão, J. M. Dias Pereira

“ADC Resolution Enhancement Based on RBF Neural Network”, Proceedings of the 4th International Workshop on ADC Modelling and Testing (IWADC'99), vol. 1, pp. 232-235, Bordeaux, France, September 1999.

**9.3.237** O.A. Postolache, J.M. Dias Pereira, P. Silva Girão, M. Cretu

“Application of RBF Neural Network in ADC Resolution Enhancement”, Proceedings of IMEKO XV World Congress, Volume IV TC-4, pp. 89-92, Osaka, Japan, June 1999.

- 9.3.238** J.M. Dias Pereira, A. Cruz Serra, P. Silva Girão  
“Dithering in Interleaved ADC Systems”, Proceedings of IMEKO XV World Congress, Volume IV TC-4, pp. 81-84, Osaka, Japan, June 1999.
- 9.3.239** J.M. Dias Pereira, A. Cruz Serra, P. Silva Girão  
“Dithered ADC Systems in the Presence of Hysteresis Errors”, Proceedings of IEEE Instrumentation and Measurement Technology Conference (IMTC/99), vol. 2, pp. 1648-1652, Venezia, Italy, May 1999.
- 9.3.240** J.M. Dias Pereira, A. Cruz Serra, P. Silva Girão  
“Dithering in A/D Converters: a Compromise Between Resolution and Bandwidth”, Proceedings of 2th Conference on Telecommunications (Conftele 1999), Vol. 1, pp. 85-89, Sesimbra, Portugal, April 1999.
- 9.3.241** J.M. Dias Pereira, O. Postolache, P. Silva Girão, J.A. Brandão Faria, Mihai Cretu  
“An Optical Temperature Transducer Based on a Bimetallic Sensor”, Proceedings of the 10th International Symposium on Development in Digital Measuring Instrumentation (IMEKO TC4 - ISDDMI'98), vol. 2, pp. 661-664, Naples, Italy, September 1998.
- 9.3.242** O. Postolache, J.M. Dias Pereira, P.M. Silva Girão, M. Cretu  
“A Virtual Magnetometer Based on Artificial Neural Networks”, Proceedings of the 10th International Symposium on Development in Digital Measuring Instrumentation (IMEKO TC4 - ISDDMI'98), vol. 2, pp. 580-584, Naples, Italy, September 1998.
- 9.3.243** R. Carneiro Martins, H.M. Geirinhas Ramos, P.M. Silva Girão, A. Cruz Serra  
“Taxonomic Problems on ADC Characterisation”, Proceedings of the 5th International Conference on Electronics, Circuits and Systems (IEEE-ICECS'98), Vol. 3, pp. 445-448, Lisbon, Portugal, September 1998.  
**Invited paper.**
- 9.3.244** J.M. Dias Pereira, O. Postolache, P. Silva Girão and M. Cretu  
“Minimising Temperature Drift Errors of Conditioning Circuits Using Artificial Neural Networks”, IEEE IMTC/98 Conference Proceedings, Volume One,

pp. 276-279, St. Paul, Minnesota, USA, May 1998.

- 9.3.245** O. Postolache, J.M. Dias Pereira, P. Silva Girão and M. Cretu  
“An ANN Fault Detection Procedure Applied in Virtual Measurement Systems Case”, IEEE IMTC/98 Conference Proceedings, Volume One, pp. 257-260, St. Paul, Minnesota, USA, May 1998.
- 9.3.246** O. Postolache, J.M. Dias Pereira, P. Silva Girão, A. Cruz Serra  
“A New Virtual Instrument for Temperature Measurement Based on a Photodiode Excited by a LASER Source”, Proceedings of the IEEE 9th Mediterranean Electrotechnical Conference (MELECON'98), Vol. II, pp. 1440-1443, Tel-Aviv, Israel, May 1998.
- 9.3.247** Octavian Postolache, Pedro Silva Girão, Helena Maria Ramos, J.M. Pereira  
“A Temperature Sensor Fault Detector as an Artificial Network Application”, Proceedings of the IEEE 9th Mediterranean Electrotechnical Conference (MELECON'98), Vol. I, pp. 678-682, Tel-Aviv, Israel, May 1998.
- 9.3.248** H. Geirinhas Ramos, P. Silva Girão  
“Software Environments for the Implementation of Virtual Instrumentation”, Proceedings of the IEEE 9th Mediterranean Electrotechnical Conference (MELECON'98), Vol. I, pp. 534-538, Tel-Aviv, Israel, May 1998.
- 9.3.249** P. Silva Girão  
“Electromagnetic Compatibility: Aspects Involved in the Certification of Products”, Proceedings of the IEEE 9th Mediterranean Electrotechnical Conference (MELECON'98), Vol. I, pp. 111-115, Tel-Aviv, Israel, May 1998.
- 9.3.250** Mihai Cretu, Octavian Postolache, M. Dias Pereira, P. Silva Girão  
“Modelarea Caracteristicilor Senzorilor de Tip Magnetorezistiv Folosind RNA”, SIELMEC'97 Prima Conferinta Internationala de Sisteme Electromecanice, Vol. II, pp. 167-170, Chisinau, Moldavia, Octombrie 1997.
- 9.3.251** Octavian Postolache, Mihai Cretu, M. Dias Pereira, P. Silva Girão  
“Aplicatie a Combinatieri LASER-Fotodioda in Masurarea Temperaturii”, SIELMEC'97 Prima Conferinta Internationala de Sisteme Electromecanice, Vol.

II, pp. 163-166, Chisinau, Moldavia, Octombrie 1997.

- 9.3.252** Octavian Postolache, Miguel Dias Pereira, Mihai Cretu, Pedro Girão  
“An ANN Method for Correction of Time Drift Error in Virtual Measurement Systems”, Proceedings of SCS'97 International Symposium on Signals Circuits and Systems, Volume 2, pp. 595-598, Iasi, Romania, October 1997.
- 9.3.253** J.M. Dias Pereira, A. Cruz Serra, P. Silva Girão  
“High Accuracy Data Acquisition of Periodic Signals”, Proceedings of the 9th International Symposium on Electrical Instruments in Industry, pp. 141-144, Glasgow, Scotland, September 1997.
- 9.3.254** J.M. Dias Pereira, A. Cruz Serra, P. Silva Girão  
“Minimising Truncation Errors in Digital Wattmeters”, Proceedings of the 9th International Symposium on Electrical Instruments in Industry, pp. 113-116, Glasgow, Scotland, September 1997.
- 9.3.255** P.M.B. Silva Girão  
“Automation of Testing Processes: VXI and IEEE 488/VXI Mixed Systems”, Proceedings of XIV IMEKO World Congress, Volume IVA, pp. 305-310, Tampere, Finland, June 1997.
- 9.3.256** P.M.B. Silva Girão, A.M. Cruz Serra  
“VXI Instrumentation: Message Based or Register Based Devices?”, Proceedings of IEEE IMTC/97, Volume 1, pp. 237-240, Ottawa, Canada, May 1997.
- 9.3.257** Helena M. Geirinhas Ramos, P. Silva Girão and A. Cruz Serra  
“Impact of Virtual Instrumentation in Teaching Automated Measurement Systems”, Proceedings of IEEE AFRICON'96, Vol. II, pp. 978-981, Stellenbosch, South Africa, September 1996.
- 9.3.258** P. M. B. Silva Girão  
“National Quality Systems: The Portuguese Experience”, Proceedings of IEEE AFRICON'96, Vol. I, pp. 73-78, Stellenbosch, South Africa, September 1996.

**Invited paper.**

- 9.3.259** H. Geirinhas Ramos, P. Silva Girão  
“Experimental Validation of a Two Dimensional Vector Model of Ferromagnetic Hysteresis”, International Symposium on Non-Linear Electromagnetic Systems (ISEM), Cardiff, Scotland, September 1995.
- 9.3.260** H. Geirinhas Ramos, P. Silva Girão  
“Studies on Two-Dimensional Magnetic Phenomena in Electrical Steel Sheets at LME/IST”, Fourth Workshop on 2-Dimensional Magnetisation Problems, Cardiff, Scotland, September 1995.  
**Invited paper.**
- 9.3.261** P. Silva Girão  
“Teaching Automated Measuring Systems to Electrical Engineering M.Sc. Students”, IMEKO TC-4 7th International Symposium on Modern Electrical and Magnetic Measurements, Part 2, pp. 553-557, Prague, Czech Republic, September 1995.
- 9.3.262** M. Trindade Guerreiro, A. Farinha Rodrigues, P. Pinto Ramos, P. Silva Girão, A. Cruz Serra  
“Digital Oscilloscope and Spectrum Analyzer System Based on a Personal Computer”, IMEKO TC-4 7th International Symposium on Modern Electrical and Magnetic Measurements, Part 2, pp. 472-476, Prague, Czech Republic, September 1995.
- 9.3.263** Gilberto Lopes, P. Silva Girão  
“Automation of the Determination of Magnetic Properties of Electrical Steel and Strip Using the 25 cm Epstein Frame”, IMEKO TC-4 7th International Symposium on Modern Electrical and Magnetic Measurements, Part 2, pp. 428-432, Prague, Czech Republic, September 1995.
- 9.3.264** M. Costa Pereira, P. Silva Girão  
“Identification of Two and Four Ports Systems Using a Frequency Domain Measurement Technique”, IMEKO TC-4 7th International Symposium on Modern Electrical and Magnetic Measurements, Part 2, pp. 352-356, Prague, Czech Republic, September 1995.

- 9.3.265** H. Geirinhas Ramos, P. Silva Girão  
“Experimental Evaluation of Rotational Hysteresis Losses in Soft Magnetic Materials”, IMEKO TC-4 7th International Symposium on Modern Electrical and Magnetic Measurements, Part 1, pp. 133-137, Prague, Czech Republic, September 1995.
- 9.3.266** J.A. Ferreira Lopes, J.O. Machado Vitorino, P.M.B. Silva Girão, J.M. Torres Pereira  
“Implementação de um sistema automático de medida da condutividade de materiais semicondutores amorfos”, Actas das 4<sup>as</sup> Jornadas Luso-Espanholas de Engenharia Electrotécnica, Volume 3, pp. 1483-1486, Porto, Portugal, Julho 1995.
- 9.3.267** P. Pinto Ramos, M. Trindade Guerreiro, A. Farinha Rodrigues, A. Cruz Serra, P. Silva Girão  
“PC Based Digital Oscilloscope and Spectrum Analyzer”, Proceedings of National Instruments European User Symposium, Munich, Germany, November 1994.
- 9.3.268** A. Cruz Serra and P. Silva Girão  
“Static and Dynamic Testing of A/D Converters Using a VXI Based System”, Conference Proceedings of 1994 IEEE Instrumentation and Measurement Technology Conference, Vol. 2, pp. 903-906, Hamamatsu, Japan, May 1994.
- 9.3.269** P. Silva Girão  
“Characterization of Noise Generators: Automated Measuring System for the Determination of the Probability Distribution and Autocorrelation Functions”, Conference Proceedings of 1994 IEEE Instrumentation and Measurement Technology Conference, Vol. 2, pp. 533-535, Hamamatsu, Japan, May 1994.
- 9.3.270** H.M. Geirinhas Ramos and P. Silva Girão  
“Low Cost Audio Analog Vector Voltmeter/Wattmeter”, Proceedings of IEEE 7th Mediterranean Electrotechnical Conference (MELECON'94), Volume 3, pp. 1201-1203, Antalya, Turkey, April 1994.

- 9.3.271** H. Geirinhas Ramos, A. Lopes Ribeiro, P. Silva Girão  
“A Two Dimensional Vector Model of Ferromagnetic Hysteresis”, Abstracts of SMM 11 Soft Magnetic Materials Conference, S6-16, Venezia, Italy, September/October 1993.
- 9.3.272** V.M. Esteves Antunes, P.M. Costa Nicolau, A. Cruz Serra, P. Silva Girão  
“Stand Alone PC Based System for the Automation of Pavement Deformation Measurement Using a Benkelman Beam”, Actas das 3as Jornadas Hispano-Lusas de Ingeniería Eléctrica, Tomo IV, pp. 1565-1570, Barcelona, Espana, Julio 1993.
- 9.3.273** Pedro M. B. Silva Girão  
“Programme for an Undergraduate Course on Instrumentation and Measurement”, Proceedings of IEEE AFRICON’92, pp. 340-343, Swaziland, September 1992.  
**Invited paper.**
- 9.3.274** H. Geirinhas Ramos, P. Silva Girão  
“Measurement of Low Level DC Magnetic Fields Using a Synchronous Demodulation Technique”, Proceedings of IEEE CPEM’92, pp. 50-51, Paris, June 1992.
- 9.3.275** H. Geirinhas Ramos, P. Silva Girão  
“A Rotating Field Automated Measurement System for the Characterization of Ferromagnetic Materials”, IEEE 35<sup>th</sup> Annual Conference on Magnetism and Magnetic Materials, S. Diego, California, USA, November 1990.
- 9.3.276** H. Geirinhas Ramos, P. Silva Girão  
“PC Based System for the Characterization of Ferromagnetic Materials”, Actas das Jornadas Hispano Lusas de Ingeniería Eléctrica, Tomo III, pp. 1235-1244, Vigo, Espana, Julio 1990.
- 9.3.277** P.M.B. Silva Girão, J.F. Borges da Silva  
“Automated Measurement System to Generate a Preisach Type Model of Ferromagnetic Hysteresis”, Conference Record of the IMTC/86 IEEE Instrumentation and Measurement Technology Conference, pp. 207-211, Boulder, Colorado, USA, March 1986.

**9.3.278** A. Santos Pascoal, M. Ventim Neves, P. Silva Girão  
“Aplicação de um Microprocessador ao Controlo Digital em Tempo Real”,  
Congresso da Ordem dos Engenheiros, Lisbon, Portugal, December 1981.

**9.3.279** A.M. Santos Pascoal, M.F. Ventim Neves, P.M.B. Silva Girão  
“A Microcomputer Based PID Controller”, Proceedings of the 1981 Vigo  
Workshop on Signal Processing and its Applications, pp. C1/4/1 - C1/4/8, Vigo,  
Spain, July 1981.

#### **9.4 Editions, Patents, and Standards**

**9.4.1** P.M. Girão, Octavian Postolache (editors)  
*Smart Wearable Sensors and Systems for Healthcare Monitoring*, Sensors, MDPI  
AG, Switzerland, 2022.

**9.4.2** P.M. Girão, Octavian Postolache, Sergio Rapuano (editors)  
*Advanced Sensing Technologies for Environmental Monitoring Applications*,  
Applied Sciences, MDPI AG, Switzerland, 2020.

**9.4.3** P.M. Girão, Octavian Postolache, Edward Sazonov (editors)  
*Assistive Devices and Sensors*, Sensors, MDPI AG, Switzerland, 2020.

**9.4.4** P.M. Girão, G. Cannata, P.M. Ramos, P. Maiolino (Editors)  
*Tactile Sensors and Applications*, Sensors, MDPI AG, Switzerland, 2018.

**9.4.5** Seunghee Park, Aimé Lay-Ekuakille, Octavian Postolache, Pedro Silva Girão  
(Editors)  
*Intelligent Sensing Technologies for Nondestructive Evaluation*, Sensors, MDPI  
AG, Switzerland, 2017.

**9.4.6** Aimé Lay-Ekuakille and Pedro Silva Girão (Editors)  
*Environmental Measurement and Instrumentation*, IET Science, Measurement  
and Technology, May, 2014.

**9.4.7** Aimé Lay-Ekuakille and Pedro Silva Girão (Editors)  
4<sup>th</sup> IMEKO TC19 Symposium on Environmental Instrumentation and

Measurements, “Protecting Environment, Climate Changes and Pollution Control”, June 3-4, 2013, Lecce, Italy.

- 9.4.8** Pedro Silva Girão, Pedro Miguel Ramos, Francisco Alegria (Editors)  
Proceedings of the XIX IMEKO World Congress, Lisbon, Portugal, September 2009.
- 9.4.9** Octavian Postolache, Pedro Silva Girão, Gabriela Postolache  
“Sistema e Processo para Optimização do Funcionamento do Equipamento e do Método de Desfibrilhação/Cardioversão para Sujeitos Humanos” (System and process for functioning optimization of defibrillation/cardioversion equipment and method for human subjects). Patent PT105456, December 2012.
- 9.4.10** Octavian Postolache, Pedro Silva Girão  
“Módulo de identificação e aquisição de dados para transdutores com saída analógica em tensão ou corrente” (Module of Identification and Data Acquisition for Transducers with Analogue Voltage or Current Output). Patent 104735, November 2011.
- 9.4.11** Octavian Postolache, Pedro Silva Girão, Gabriela Postolache, Eduardo Pinheiro  
“Unidade de Sistema Ubíquo para Cuidados Continuados de Saúde com Capacidades de Localização e Monitorização de Sinais Fisiológicos em Sujeitos Humanos (Unit of System for Ubiquitous Continuous Healthcare with Location and Humans Physiological Signals Monitoring Capabilities). Patent PT104602, September 2011.
- 9.4.12** Pedro Silva Girão, Octavian Postolache, Gabriela Postolache  
“Medidor de parâmetros fisiológicos baseado em sensores tipo auricular, arquitectura Bluetooth distribuída e em telemóveis” (Physiological parameter measuring system based on headset type sensors, Bluetooth distributed architecture and mobile phones). Patent PT104038, March 2010.
- 9.4.13** José Miguel Dias Pereira, Vítor Viegas, Carlos Banha, Pedro Silva Girão, Octavian Postolache, João Barreiros, Manuel Cunha  
“Medidor de sucção não-nutritiva em prematuros” (Gauge for non-nutritive sucking of preterm infants). Patent PT103979, February 2010.

- 9.4.14** Pedro Silva Girão, Octavian Postolache, José Miguel Dias Pereira, Helena Geirinhas Ramos  
“Sistema automático e distribuído de medição de parâmetros da qualidade da água” (Distributed Automated Water Quality Parameters Measuring System). Patent PT103626, November 2007.
- 9.4.15** Pedro Silva Girão, Octavian Postolache, Gabriela Postolache  
“Instrumento portátil móvel para medição dos parâmetros de homeostasia em seres humanos” (Mobile Portable Instrument for the Measurement of Human Homeostasis). Patent PT103683, October 2007.
- 9.4.16** Francisco Alegria, Pedro Silva Girão  
“Sistema de identificação automática de matrículas de veículos a partir de imagens vídeo” (Video Image Based Vehicle Plate Recognition System). Patent PT103680, September 2007.
- 9.4.17** Pedro Silva Girão, Octavian Postolache, José Miguel Dias Pereira, Helena Geirinhas Ramos  
“Medidor de turbidez para aplicações ambientais e industriais” (Turbidimeter for Environmental and Industrial Applications). Patent PT103629, July 2007.
- 9.4.18** J. Viegas, P. Girão, F. Alegria, B. Lu, J. Vieira  
“Sistema automático de detecção e identificação da intrusão de veículos em faixas ou sentidos de circulação interditados ao trânsito” (Automated System for Detection and Identification of the Intrusion of Vehicles on Closed Traffic Lanes), Patent PT103501, April 2007.
- 9.4.19** Pedro Silva Girão, Raul Carneiro Martins (Editors)  
Sensors and Actuators – Monographs – Volume 2: 2004/2005.
- 9.4.20** Pedro Silva Girão, Raul Carneiro Martins (Editors)  
Sensors and Actuators – Monographs – Volume 1: 2003/2004.
- 9.4.21** IEC TC85/WG 16: G. Capponi; H.-H. Albrecht, R.A. Belcher, G. Betta, D.W. Braudaway, P.S. Girão, S. Haapamaki, V. Haasz, P. Packenbush, A.M. C. Serra, P.V. Reeth

IEC standard 62008 (85/231/CD), 2005, “Performance characteristics and calibration methods for digital data acquisition systems and relevant software”.

**9.4.22** António Cruz Serra and Pedro Silva Girão (Editors)

Proceedings of the 6th Euro Workshop on ADC Modelling and Testing, JAMP Lda., ISBN 972-98115-5-5, Legal Deposit 168084/01, Lisbon, Portugal, September 2001.

**9.4.23** António Cruz Serra and Pedro Silva Girão (Editors)

Proceedings of the 11th IMEKO TC-4 Symposium “Trends in Electrical Measurement and Instrumentation”, JAMP Lda., ISBN 972-98115-4-7, Legal Deposit 168083/01, Lisbon, Portugal, September 2001.

## **9.5 Pedagogical-oriented Work**

### **9.5.1 Licenciatura**

**9.5.1.1** P.M.B. Silva Girão

Lean Production, BSc. program 6B07532 - "Standardization and Certification", L.N. Gumilyov Eurasian National University, Nur-Sultan, Kazakhstan, collection of slides, 2020.

**9.5.1.2** P.M.B. Silva Girão

Quality Control of Goods and Services, BSc. program 6B07532 - "Standardization and Certification", L.N. Gumilyov Eurasian National University, Nur-Sultan, Kazakhstan, collection of slides, 2020.

**9.5.1.3** P.M.B. Silva Girão

Introdução à Engenharia Eletrónica (Introduction to Electronics Engineering), collection of slides, 2021, 2020, 2019.

**9.5.1.4** P.M.B. Silva Girão

Comunicação Oral e Escrita (Oral and Written Communication), collection of slides, 2013.

**9.5.1.5** P.M.B. Silva Girão

Formação Livre II (Soft Skills II), collection of slides, 2013.

**9.5.1.6** P.M.B. Silva Girão

Tecnologia e Medidas Eléctricas (Technology and Electrical Measurements), Escola Naval, 2005.

**9.5.1.7** P.M.B. Silva Girão

Sensores e Actuadores (Sensors and Actuators) collection of slides, IST, 2003.

**9.5.1.8** P.M.B. Silva Girão

Instrumentação e Medidas (Instrumentation and Measurements) – Chapters 1, 2 and 4, AEIST.

**9.5.1.9** Laboratorial works for Instrumentação e Aquisição de Sinais (Instrumentation and Signal Acquisition), IST, 2004/2005 e 2005/2006 (\*):

- Análise de Sinais no Domínio do Tempo e no Domínio da Frequência (Time and frequency domain signal analysis);
- Amplificação de Sinais Eléctricos. Interferência Electromagnética (Electrical signals amplification. Electromagnetic interference);
- Filtragem Analógica e Digital de Sinais Eléctricos (Analog and digital filtering of electrical signals);
- Circuitos com Parâmetros Concentrados: Medição de Impedância (Lumped parameters circuits: impedance measurement);
- Aquisição de Sinais (Signal acquisition);
- Introdução ao Equipamento de Medida Elementar de um Laboratório (Introduction to basic laboratorial instruments);
- Medição de uma Impedância Utilizando Detecção Síncrona (lock-in amplifier) (Lock-in amplifier based impedance measurement);
- Análise Espectral. Analisador de Espectros Heterodino (Spectral analysis. Heterodyne spectrum analyser);
- Interferência e Susceptibilidade Electromagnética (Electromagnetic interference and susceptibility);

- Amplificação de Bio-sinais (Bio-signals amplification);
- Detecção e Condicionamento de Sinais Bioeléctricos (Electrocardiograma) (Detection and conditioning of bioelectric signals (electrocardiogram));
- Implementação da Função de Auto Configuração num Sistema de Aquisição e Visualização de Sinais (Implementation of the auto-run function in a signal acquisition and visualization system);
- Medição de uma Bioimpedância (Measurement of a bioimpedance);
- Aquisição e Processamento Digital de Sinais Biológicos (Acquisition and digital processing of biologic signals).

**9.5.1.10** Sensores e Actuadores (Sensors and Actuators) evaluation mini-projects:

- Actuador hidráulico linear com ajuste de posição (Position controlled hydraulic linear actuator);
- Actuador hidráulico linear com ajuste de velocidade (Speed controlled hydraulic linear actuator);
- Actuador pneumático linear com ajuste de posição (Position controlled pneumatic linear actuator);
- Actuador pneumático linear com movimento linear periódico (Periodic linearly controlled pneumatic linear actuator);
- Balança com indicação digital (Digital balance);
- Sistema de posicionamento global (GPS);
- Controlo de posição angular utilizando um inclinómetro (Angular position control using an inclinometer);
- Medição da aceleração e velocidade angular utilizando um acelerómetro unidireccional (Angular acceleration and speed measurement using a unidirectional accelerometer);
- Transdução de deslocamento Inductosyn (Inductosyn displacement transducer);
- Caracterização de actuadores eléctricos (Electrical actuators characterization);

- Posicionador 2D utilizando actuadores eléctricos (2D positioner using electrical actuators);
- Transdutor de atitude utilizando giroscópios (Gyroscope-based attitude transducer);
- Transdutor ultrasónico de posição 2D (2D ultrasonic position transducer).

**9.5.1.11** Medidas Eléctricas (Electrical Measurements) and Instrumentação e Medidas (Instrumentation and Measurements) laboratorial works, IST, 1975/01:

- Medição da resistência interna de um instrumento de quadro móvel pelo método de igual desvio (Measurement of the internal resistance of a moving-iron instrument using the equal deflexion method);
- Aferição de um wattímetro electrodinâmico (Calibration of an electrodynamic wattmeter);
- Voltímetros quadráticos e de valor médio (Quadratic and average responding voltmeters) (\*);
- Utilização da oscilografia digital na análise do funcionamento duma lâmpada fluorescente (Analysis of the operation of a fluorescent lamp using digital oscillography) (\*);
- Sistema automático de medida para a obtenção da característica de um dínamo em vazio (Automated measuring system for the determination of the characteristic of an unloaded dynamo) (\*);
- Amplificadores operacionais e de instrumentação (Operational and instrumentation amplifiers) (\*);
- Calibração em corrente contínua de instrumentos de medida (DC calibration of measuring instruments) (\*);
- Fontes de alimentação de tensão contínua (DC power supplies) (\*);
- Malha de fase síncrona (Phase-locked loops);
- Contador universal de tempo/frequência (Universal time-frequency counter) (\*);

- Sistema automático de medida para a obtenção das características  $I_c(V_{ce})$  de um transistor (Automated measuring system for transistor  $I_c(V_{ce})$  characteristic tracing) (\*);
- Voltímetro digital (Digital voltmeter) (\*);
- Osciloscópio digital (Digital oscilloscope) (\*);
- Transdutores de medida (Measuring transducers).

**9.5.1.12** Electrónica I (Electronics I) and Electrotecnia Teórica I e II (Theoretic Electrotechnics I and II) evaluation projects, IST, 1975/90:

- Desvio electrónico por campo magnético estático não uniforme (Electronic deflexion by static, non-uniform magnetic field);
- Elemento de memória de computador utilizando um núcleo de ferrite (Ferrite-based computer memory element);
- Circuito de desvio horizontal de um televisor (Television horizontal deflexion circuit) (\*).

**9.5.2 Master Degree**

**9.5.2.1** Formação Livre II (Soft Skills II), collection of slides, 2013.

**9.5.2.2** Sensores e Actuadores Inteligentes (Smart Sensors and Actuators) collection of slides, IST, 2006.

**9.5.2.3** Transdutores de Medida (Measuring Transducers) collection of slides, IST, 1996.

**9.5.2.4** Sistemas Automáticos de Medida (Automated Measuring Systems) and Instrumentação Suportada em Computadores Pessoais (PC-based Instrumentation) collection of slides, IST, 1989.

**9.5.2.5** Transdutores de Medida (Measuring Transducers) collection of slides, IST, 1988.

**9.5.3 Professional Training**

**9.5.3.1** Instrumentação e Equipamento de Medida (Instrumentation and

Measuring Equipment), 1996 (\*).

**9.5.3.2** Fundamentos de Medida e Instrumentação (Fundamentals of Measurement and Instrumentation), FUNDETEC, 1987 (\*).

**9.5.3.3** Instrumentação Laboratorial ((Laboratorial Instrumentation), FUNDETEC, 1987 (\*).

**9.5.3.4** Fundamentos de Instrumentação Laboratorial (Fundamentals of Laboratorial Instrumentation), IST/FSE, 1987 (\*).

**9.5.3.5** Instrumentação (Instrumentation), IST/FSE, 1986:

- Fundamentos da Instrumentação Digital (Digital Instrumentation Fundamentals);
- Multímetro Digital (Digital multimeter);
- Transmissão de Informação entre Sistemas (Transmission of information between systems);
- Oscilografia Digital (Digital oscillography).

(\*) – In co-authorship