Jânio Anselmo, M.Sc. Eng.

Electrical Engineer - CREA-SC: 074576-3

Areas of Interest

Electrical Engineering, Biomedical Engineering, Electronics, Microcontrollers, Digital Signal Processing, Image Processing, Cell Membrane Electroporation, Pulsed Electric Fields (PEF), Food Preservation, Microorganism Inactivation, and Business Management.

Academic Background

2023–2027 (ongoing) **Ph.D. in Electrical Engineering**, *Federal University of Santa Catarina (UFSC)*, Florianópolis/SC, Brazil
Stricto Sensu postgraduate program. Concentration area: Biomedical Engineering.

2015–2018 **Postgraduate Certificate in Business Management**, *Municipal College of Palhoça (FMP)*, Palhoça/SC, Brazil
Lato Sensu specialization.

2008–2015 **Bachelor of Technology in Telecommunications Systems**, *Federal Institute of Santa Catarina (IFSC)*, São José/SC, Brazil
Undergraduate technology degree.

2012–2014 **Master's in Electrical Engineering**, *Federal University of Santa Catarina (UFSC)*, Florianópolis/SC, Brazil
Stricto Sensu postgraduate program. Concentration area: Biomedical Engineering.

2006–2011 **Bachelor's in Electrical Engineering (Emphasis in Telematics)**, *University of Southern Santa Catarina (UNISUL)*, Palhoça/SC, Brazil
Electives in Power Electronics and Computer Networks.

1997–2001 **Technical Course in Telecommunications**, *Federal Institute of Santa Catarina (IFSC)*, São José/SC, Brazil
Vocational technical course.

Academic Experience

2025 **Teaching Internship**, *UFSC*, Florianópolis/SC, Brazil
Taught the course "Transducers Laboratory" for the Electrical and Electronic Engineering programs.

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Nationality: Brazilian | Age: 41 | Marital status: Married

2017 **Thesis Committee: Gabriel Gonçalves Neves**, *UFSC*, Florianópolis/SC, Brazil
Committee member for the undergraduate thesis: "In Vitro Electroporation Study: Numerical Simulation and Experiments." **SUZUKI, D. O. H.; BOOS, C. F.; SALES, C.; ANSELMO, J.** (Electronic Engineering).

2017 **Thesis Committee: Jéssica Rodrigues da Silva**, *UFSC*, Florianópolis/SC, Brazil
Committee member for the undergraduate thesis: "Analysis of Electrical, Geometrical, and Chemical Parameters in the Application of Nanosecond Electric Fields to Biological Cells." **SUZUKI, D. O. H.; BOOS, C. F.; ANSELMO, J.** (Electronic Engineering).

2014 **Thesis Committee: Ana Paula Rosa Negri**, *IFSC*, São José/SC, Brazil
Committee member for the undergraduate thesis: "Detection of Epileptic Seizures Based on EEG Signals Using Wavelet Transform." **MEDEIROS, D. S.; MERLIN, E. M. L.; MOECKE, M.; ANSELMO, J.** (Telecommunications Systems).

2013–2014 **Master's Thesis: Single Cell Electroporation Study**, *UFSC*, Florianópolis/SC, Brazil
Numerical study of electrical and mechanical effects on the cell membrane during electroporation of isolated biological cells via capillary electrode. Advisors: Prof. Daniela O. H. Suzuki and Prof. Jefferson L. B. Marques.

2012 **Teaching Internship**, *UFSC*, Florianópolis/SC, Brazil
Taught the course "Transducers Laboratory" for the Electrical and Electronic Engineering programs.

Academic Publications

2014 **SUZUKI, D. O. H.; ANSELMO, J.; DE OLIVEIRA, K. D.; FREYTAG, J. O.; RANGEL, M. M. M.; MARQUES, J. L. B.; RAMOS, A.** Numerical model of dog mast cell tumor treated by electrochemotherapy. *Artificial Organs*, 2014.

2014 **FRONZA, C. F.; ANSELMO, J.; MARQUES, J. L. B.; PINTARELLI, G. B.; CASTRO, A. DE** A blower-like approach to predict the effectiveness of vaccines in a TB dynamic. *International Journal of Engineering Research and Applications*, vol. 4, no. 6, pp. 233–238, Delhi, 2014.

2014 **FRONZA, C. F.; ANSELMO, J.; MARQUES, J. L. B.** In silico system for early diagnosis of diabetes mellitus complications using dynamic pupillometry and heart rate variability. *BIOMAT 2014 – International Symposium on Mathematical and Computational Biology*, Poznań, Poland, 2014.

2014 **ANSELMO, J.; SUZUKI, D. O. H.; MARQUES, J. L. B.** Numerical studies of influential parameters in electroporation through stretched microcapillaries. *XXIV Brazilian Congress of Biomedical Engineering*, Uberlândia/MG, Brazil, 2014.

Extension Activities

2013 Reviewer of scientific articles for the *American Medical Informatics Association* (AMIA), with three reviews completed in 2014.

2013 Instructor of the course *Biomedical Signal Processing* at the *5th Practical Biomedical Engineering Short Course*.

2012 Organizer of the *4th Practical Biomedical Engineering Short Course*.

Technical Projects

2021 **Home Healthcare Device**, *ENSA Tecnologia*, Palhoça/SC, Brazil, **ENSABiofeedback-100A**

Microcontroller-based system for acquiring multiple physiological signals: photoplethysmography (PPG), electromyography (EMG), and galvanic skin response (GSR). Used for biofeedback evaluation and training.

2019 **Environmental Automation Equipment**, *ENSA Tecnologia*, Palhoça/SC, Brazil, **ENSAMed-200S**

Microcontroller-based system for automating fuel stations, monitoring environmental sensors in pump sumps and tank interstices (SASC).

2017 **OCR Automation Algorithms**, *ENSA Tecnologia*, Palhoça/SC, Brazil, **ENSAPlate**

Development of pattern classification algorithms using artificial neural networks (ANN) for vehicle license plate recognition in fuel stations and gated communities.

2017 **Control and Automation System (IoT)**, *ENSA Tecnologia*, Palhoça/SC, Brazil, **ENSAIoT-200A**

Microcontroller-based system for monitoring volume, pressure, water flow, and temperature, with real-time data transmission via Software as a Service (SaaS).

2016 **IoT Development Platform**, *ENSA Tecnologia*, Palhoça/SC, Brazil, **ENSAIoT-100A**

Open-source microcontroller board for automation development with digital and analog I/O, Bluetooth, Wi-Fi, RS-232, RS-485, LCD display, touch keypad, and relay outputs.

2015 **Biometric Access Control**, *ENSA Tecnologia*, Palhoça/SC, Brazil, **ENSAControll-100A**

Microcontroller-based system with Ethernet and GSM/GPRS, used in hostile environments and centralized databases for electronic time tracking and personnel control.

2013 **Vital Signs Monitoring Platform**, *UFSC*, Florianópolis/SC, Brazil, **Low Cost Spirometry**

Low-cost hardware for monitoring heart rate and heart sounds, developed in the course *Smart Medical Devices*, with Prof. Mohamad Sawan, Ph.D.

2012 **Entertainment Platform**, *ENSA Tecnologia*, Palhoça/SC, Brazil, **ENSAAirGame-100A**

Microcontroller-controlled air hockey table for commercial venues, with user access via rechargeable RFID cards or tokens.

2011 **Volumetric and Environmental Monitoring Device**, *ENSA Tecnologia*, Palhoça/SC, Brazil, **ENSAMed-100B**

Microcontroller-based system for volumetric measurement and environmental monitoring in fuel station sumps and tank interstices (SASC).

2009 **Monitored Alarm System**, *ENSA Tecnologia*, Palhoça/SC, Brazil, **ENSAHome-100A**

Microcontroller-based alarm system for residential and small business use, with motion and human presence detection.

Patents and Registrations

2025 **ANSELMO, Jânio.** Electronic process using ultrasound technology for real-time volumetric measurement in liquid waste trucks. Brazil, 2025. Patent: Innovation Privilege. Registration number: **BR1020250011603**. Title: "Electronic process using ultrasound technology for real-time volumetric measurement in liquid waste trucks." Filing institution: INPI - Brazilian National Institute of Industrial Property. Filing date: January 22, 2025. Funding institution: ENSA Tecnologia.

2016 **ANSELMO, Jânio; ANSELMO, T.** Trademark and patent registration of ENSA Tecnologia products and services. Brazil, 2016. Type: Registered Trademark. Registration number: **925500895**. Institution: INPI - Brazilian National Institute of Industrial Property.

Languages

- **Portuguese** - Fluent (native)
- **English** - Intermediate
- **Spanish** - Basic

Tools and Technologies

Programming	Matlab, Octave, C/C++, Python, Java
Microcontroller Architectures	Microchip (PIC), Atmel (AVR), Espressif (ESP)
CAD Tools	Eagle, Altium Designer, KiCAD
Office Suites	LaTeX, MS Office, LibreOffice
Simulation Software	PSpice, Proteus, COMSOL Multiphysics

Volunteer Work

2020–present Assistant Pastor at Centro Evangélico Missões (CEM/Palhoça); leader of the Multimedia Ministry; supervisor of Growth Groups (GCs); Theology teacher and Couples Ministry leader.

2019–present Theology teacher at Centro Evangélico Missões (CEM/Palhoça), teaching courses such as Discipleship, Bibliology, Evangelism and GCs, Baptism in the Holy Spirit and Spiritual Gifts, Church History, Introduction to the Old and New Testaments, and Homiletics.

2023 Teacher at the School of Missions (CEM/Palhoça), teaching the subject: African Geography.

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