**Joaquin Casanova, PhD, PE**

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**PROFESSIONAL PREPARATION**

**Ph.D., Electrical and Computer Engineering**

University of Florida, Gainesville, FL; May 2010

**M.E., Agricultural and Biological Engineering**

University of Florida, Gainesville, FL; December 2007

**B.S., Agricultural and Biological Engineering**

University of Florida, Gainesville, FL; May 2006

**EXPERIENCE**

**Radio Frequency Circuits & Systems Research** **- *Research Assistant* *Professor* -** 8/2016-Present

Design, simulation, and fabrication of ultra-low-field magnetometer for DARPA magnetoencephalography project. Development of forward/inverse model for neuronal current dipoles using image processing techniques.

**UF Chemistry Electronics Shop - *Senior Engineer* -** 11/2013-6/2016

Repair and troubleshooting minor and major analytical equipment including NMR, GC-MS, incubators, etc. Projects included modeling, design, development, and testing of a novel ion guide, RF source for DNP NMR, UV sensor amplifier, high voltage square wave generator, plasma source, ion detector, and others.

**USDA-ARS Conservation and Production Research Laboratory - *Research Engineer* –** 5/2010-10/2013

Modeling, design, development, and field testing of a digital access-tube TDR soil moisture sensor. Development of waveform analysis software in MATLAB. Design, development in, and field testing of a system for image processing for crop stress detection, using MATLAB and C++.

**Radio Frequency Circuits & Systems Research** *-* ***Research/Teaching Assistant*** – 12/2007-5/2010

Developed EDA tools for system/coil design in wireless power systems using MATLAB. Developed Bayesian algorithm in MATLAB, implemented in C++, for load detection and tracking in wireless power system.

**UF Center for Remote Sensing** - ***Research Assistant*** – 4/2004-12/2007

Managed data acquisition and analysis for several large scale agricultural remote sensing experiments. Developed and calibrated terrain microwave brightness and land surface heat and mass transfer models in Fortran.

**RELEVANT PUBLICATIONS**

Schwartz, R. C., Casanova, J. J., Bell, J. M., & Evett, S. R. (2014). A reevaluation of time domain reflectometry propagation time determination in soils. *Vadose Zone Journal*, *13*(1).

Casanova, J. J., O'Shaughnessy, S. A., Evett, S. R., & Rush, C. M. (2014). Development of a wireless computer vision instrument to detect biotic stress in wheat. *Sensors*, *14*(9), 17753-17769.

Casanova, J. J., Schwartz, R. C., & Evett, S. R. (2014). Design and field tests of a directly coupled waveguide-on-access-tube soil water sensor.*Applied Engineering in Agriculture*, *30*(1), 105-112.

Casanova, J., O’Shaughnessy, S., & Evett, S. (2013, November). Wireless computer vision system for crop stress detection. In *ASA-CSSA-SSSA Annual Meeting Abstracts* (p. 123). ASA-CSSA-SSSA Annual Meeting Abstracts. Session 196-7.

Casanova, J. J., Evett, S. R., & Schwartz, R. C. (2012). Design and field tests of an access-tube soil water sensor. *Applied Engineering in Agriculture*,*28*(4), 603-610.

Casanova, J. J., Evett, S. R., & Schwartz, R. C. (2012). Design of access-tube TDR sensor for soil water content: Testing. *Sensors Journal, IEEE*,*12*(6), 2064-2070.

Casanova, J. J., Evett, S. R., & Schwartz, R. C. (2012). Design of access-tube TDR sensor for soil water content: Theory. *Sensors Journal, IEEE*,*12*(6), 1979-1986.

Garnica, J., Casanova, J., & Lin, J. (2011, May). High efficiency midrange wireless power transfer system. In *Microwave Workshop Series on Innovative Wireless Power Transmission: Technologies, Systems, and Applications (IMWS), 2011 IEEE MTT-S International* (pp. 73-76). IEEE.

Casanova, J. J., Taylor, J. A., & Lin, J. (2010). Design of a 3-D fractal heatsink antenna. *Antennas and Wireless Propagation Letters, IEEE*, *9*, 1061-1064.

Low, Z. N., Casanova, J. J., Maier, P. H., Taylor, J. A., Chinga, R. A., & Lin, J. (2010). Method of load/fault detection for loosely coupled planar wireless power transfer system with power delivery tracking. *Industrial Electronics, IEEE Transactions on*, *57*(4), 1478-1486.

Casanova, J. J., Low, Z. N., & Lin, J. (2009). Design and optimization of a class-E amplifier for a loosely coupled planar wireless power system.*Circuits and Systems II: Express Briefs, IEEE Transactions on*, *56*(11), 830-834.

Casanova, J. J., Low, Z. N., & Lin, J. (2009). A loosely coupled planar wireless power system for multiple receivers. *Industrial Electronics, IEEE Transactions on*, *56*(8), 3060-3068.

Casanova, J. J., Judge, J., & Jang, M. (2007). Modeling transmission of microwaves through dynamic vegetation. *Geoscience and Remote Sensing, IEEE Transactions on*, *45*(10), 3145-3149.

**PROFESSIONAL MEMBERSHIPS**

2004–present American Society of Agricultural and Biological Engineers (ASABE)

2006–present Institute of Electrical and Electronics Engineers (IEEE)