

Héctor Huerta Avila

Education.

- **Ph.D. in Electrical Engineering, specialty on Automatic Control.** CINVESTAV-Guadalajara, Mexico, 2008.
- **Science Master in Electrical Engineering, specialty on Automatic Control.** CINVESTAV-Guadalajara, Mexico, 2005.
- **Communications and Electronics Engineering.** Universidad de Guadalajara, Mexico, 2003.

Projects participation.

- Design, simulation and implementation of nonlinear robust controllers for electric power systems, CINVESTAV, Unidad Guadalajara, May 2005-October 2008.
- Synchronous generators controllers: design and implementation, CINVESTAV, Unidad Guadalajara, March 2006 - January 2008.
- Design of optimal controllers for induction motors, ITESM, Campus Guadalajara, January 2009 - August 2009.
- Design and control of power converters for electro-mechanical systems, ITESM, Campus Guadalajara, January 2010 - September 2010.
- Design of controllers for continuous microalgae cultivation process, ITESM, Campus Guadalajara, July 2011 – July 2012.

Professional experience.

- Mechatronics and electronics professor. Universidad de Guadalajara. Since August 2012.
- Mechatronics and electronics professor. ITESM, Campus Guadalajara. Since September 2008.
- Mathematics and physics teacher. UNITEC, Campus Zapopan. January-July 2008.
- Courses taught:
 - Matemáticas para ingeniería (Calculus, differential equations, complex variables).
 - Matemáticas para ingeniería con Matlab.
 - Matlab y simulink.
 - Programación con Matlab.
 - Circuitos eléctricos (Electrical circuits).
 - Laboratorio de instrumentación y mediciones (Measurements and instruments lab).
 - Laboratorio de diseño de sistemas lógicos (Digital systems lab).
 - Ingeniería de control (Control engineering).
 - Control digital (Control in discrete time).
 - Laboratorio de control automático (Automatic control lab).
 - Automatismos lógicos (PLC, electroneumatics and digital systems).
 - Actuadores (Actuators).
 - Análisis de circuitos y redes (Circuits analysis).
 - Servoactuadores (Servo-actuators).

- Control difuso (Fuzzy control).
- Diseño electrónico analógico (Advance electronic design).
- Inteligencia artificial avanzada (Advance artificial intelligence).

Publications.

Journals-

- H. Huerta, Alexander G. Loukianov, and Jose M. Cañedo, "Robust multimachine power systems control via high order sliding modes", *Electric Power Systems Research* 81 (2011), pp. 1602-1609
- H. Huerta, Alexander G. Loukianov, and Jose M. Cañedo, "Decentralized sliding mode block control of multimachine power systems", *International Journal of Electrical Power & Energy Systems*, Volume 32, Issue 1, January 2010, Pages 1-11, doi:10.1016/j.ijepes.2009.06.016.
- H. Huerta, A. G. Loukianov, and J. M. Cañedo, "Multimachine power systems control: Integral SM approach.", *IEEE Transactions on Industrial Electronics* 56 (6), pp. 2229-2236, November, 2009.

Book chapter-

- H. Huerta, A. G. Loukianov, and J. M. Cañedo, *Integral Sliding Modes with Block Control and of Multimachine Electric Power Systems*, Chapter of book: *System, Structure & Control*, In-The, Croatia, August, 2008, pp. 83-110.

Conference papers-

- Alexander G. Loukianov, Héctor Huerta, Victor Utkin and Jose M. Canedo, "Nonlinear Passivity Robust Decentralized Controller for Large Scale Power System", Aceptado para su publicación en 13th IFAC Symposium on Information Control Problems in Manufacturing, INCOM '09, Moscow, Rusia, Junio de 2009.
- H. Huerta, A. G. Loukianov, and J. M. Cañedo, "Passivity-based sliding mode control of power systems." *IEEE 10th International Workshop on Variable Structure Systems, VSS'08*, art. no. 4570732, pp. 343-348.
- H. Huerta-Avila, A. G. Loukianov, and J. M. Cañedo, "Nested integral sliding modes of large scale power system." *Proc. of CDC07, New Orleans, U.S.A., December, 2007.*
- H. Huerta-Avila, A. G. Loukianov, and J. M. Cañedo, "Nested Integral Sliding Mode Control of Multimachine Power Sytems", *Proc. of IFAC SSSC07, Iguazu, Brazil, October, 2007.*
- Héctor Huerta A., Alexander G. Loukianov and José M. Cañedo , "Nested integral sliding modes control for multimachine power systems." *Proc. of AMCA06, D. F., México, October, 2006.*
- Héctor Huerta A., José M. Cañedo, and A. G. Loukianov. "Observed-Based Nested Integral Sliding Modes of Electric Power Systems." *Proc. of FIE, Santiago, Cuba, 2006.*
- G. Loukianov, José M. Cañedo, and Héctor H. Avila "Decentralized Sliding Mode Block Control of Power System" *Proc. of IEEE PES General Meeting, Montréal, Quebec, Canada, June, 2006.*

Other skills

- Simulation of dynamics systems.
- Design of electronic prototypes.
- Design of control strategies.
- Implementation of control strategies.
- Automate systems.