Electronic Instrumentation

This research area includes:
- Instrumentation and measurement systems: design, test and prototyping
- Integration of measurement devices and sensors in complex control systems.

Recent Projects

• Preliminary study of tubes for buried AT cables. Uralita sistemas de tubería in collaboration with Instituto de Microelectrónica de Madrid (CSIC). November 2003-February 2004

Recent Publications


Active collaborations with:


Members

Academic staff:
Sadot Alexandres Fernández
Cesáreo Fernández Martínez
Aurelio García Carrada
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Romano Giannetti *
Carlos Mateo Domingo
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GEA is an interdisciplinary group within IIT. Its activities span various topics such as industrial electronics, control, automation and industrial communications.

In the GEA, we design and develop systems using cutting edge technology in the fields of instrumentation, electronics and automatic control of processes.

Example of applications and areas of expertise are:

- Railways networks (CCMV-B-SEPSA projects)
- Energy providers (DENISE-61850, DENISE-EVERIS y ADDRESS)
- Control systems (CRISA-MOET project, CRISA-VIBRATIONS project)
- Communications industry (PRO-TVD y OPERA)

Automation and Industrial Communications

This research area includes:

- Industrial communication systems.
- System automation.
- Industrial Informatics: electrical and railway power system control.
- Design and implementation of embedded electronic systems.

Recent Projects

- ADDRESS: Active distribution networks with full integration of demand and distributed energy resources. European Commission

Main research areas

- Automation, Communications and Industrial Informatics
- Power electronics and control systems
- Electronic Instrumentation
- Electromagnetic Compatibility

Power Electronics and Control Systems

This research area includes:

- Control algorithms for electronic power devices in power distribution systems.
- Control algorithms for FACTS devices in for flexible energy transport systems.
- Control of electrical machines and parameter extraction.
- Control algorithms for electrical machines in windmills.
- Control, optimization and parameter extraction algorithms for industrial application.
- Applications of thermoelectricity.

Recent Projects

- FAPSAI: Control of active power filters for uninterruptible power supply systems. Ministerio de Educación y Ciencia. October 2006-September 2009
- Active vibration control in cryocoolers. CRISA. December 2007-July 2008
- HELICOP-II: Development of an auto-pilot system for the VISCIOPTER helicopter. Application to aerial image acquisition to support precision agriculture. Universidad Pontificia Comillas. October 2005-October 2007

Recent Publications


Recent Publications


Recent Publications