

ABOUT IMSE

The Seville Microelectronics Institute (IMSE) is a R&D centre specialized on design and test of analog and mixed-signal integrated circuits as well as on their use in any application context, specially in RF, microsystems or data conversion.

IMSE, together with the Microelectronics Institutes in Barcelona (IMB) and Madrid (IMM), form the National Microelectronics Center (CNM) operated under the umbrella of the Spanish National Research Council (CSIC).

ACTIVITIES

The personnel from IMSE has been carrying out research, teaching and technology transfer for more than 20 years. In particular, teaching is done as regular courses offered by the University of Seville and as courses and seminars given elsewhere on demand. Research activities in IMSE are focused on the implementation and experimental verification of innovative concepts related to micro/nano-electronic circuit and system design.

Starting on 2009, IMSE is offering external services based on a tester Agilent 93000, giving training, technical support and test-board design for implementing and debugging test procedures both in analog and digital.

LOCATION

IMSE is located in the Cartuja Scientific and Technological Park (PCT Cartuja), in Seville.



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INSTITUTO DE MICROELECTRÓNICA DE SEVILLA



FACILITIES AND EQUIPMENT



PULSED-LASER LAB

This lab is equipped with the new pulsed laser PULBOX PICO-RAD compact system for single-event effects testing. Using a single photon technique and a 1064nm wavelength (near-infrared) pulsed laser source, this facility allows the study of the impact of high energy particles over integrated circuits for space, medical or nuclear applications.



DEVICE CHARACTERIZATION LAB

This laboratory is mainly devoted to performing parametric measurements on semiconductors and passive devices. In this lab, it is possible to acquire internal signals from the semiconductors, already cutted and packaged, or from wafers up to 3.5", and to perform tests in a temperature range from -70°C to 180°C.



OPTOELECTRONICS LAB

This lab is equipped with the necessary instrumentation for the characterization of visible light sensors, as well as those integrated circuits made up of discrete sensors or visible light matrices. A dark chamber is also available for sensor characterization.



RADIOFREQUENCY LAB

It allows to perform spectrum and network measurements, and it is equipped with an anechoic chamber for device characterization or electromagnetic compatibility (EMC) measurements. It also allows to perform on wafer (up to 150 mm) as well as on printed circuit measurements.



COMPLEX SYSTEMS LAB

This lab has been designed to provide accomodation to those systems that, due to either their size or their special characteristics, require a greater space or an isolated environment. It is also equipped with a showcase for the manipulation of dangerous chemical products and a security cabinet.



ATE AGILENT 93000 LAB

It hosts the Agilent 93000 SOC C200e, that allows carrying out prototyping and fabrication tests of mixed-signal circuits (either already packaged or directly onto the wafer), in one only platform. It is also possible to incorporate the Thermonics T-2650 BV, that allows to perform the tests under temperature conditions ranging from -55°C to 200°C.



A/D MEASUREMENT LAB

This is the largest lab in the IMSE and it has twelve fully-reconfigurable mobile stations to carry out the experimental tests on mixed-signal integrated circuits. It also has twelve carts with specific measurement equipment that can be attached to any of the mobile stations depending on the requirements of the A/D measurements to perform.



ASSEMBLY LABS

Both the PCB Assembly Lab and the Special Assembly Lab have the necessary equipment for soldering and de-soldering through-hole and high-density packaging components, such as BGA components and fine pitch surface-mount devices.



PACKAGING LAB

This lab is used to make the bonding between chip and package. It has all the required resources to face the challenges that DSM technologies pose (with pitch size down to 50µm). It also has two chip and wafer storage units that keep them in optimal temperature and humidity conditions.



TRAINING ROOMS

The IMSE has two fully equipped training rooms, with SunRay workstations, PCs and iMacs, making it possible to impart courses on how to use the tools that allow us to design integrated circuits, and to set up any other training courses.