



PhD in INGEGNERIA DELL'INFORMAZIONE / INFORMATION TECHNOLOGY - 39th cycle

Research Area n. 2 - Electronics

THEMATIC Research Field: HIGH-SPATIAL-RESOLUTION MIMO RADAR SYSTEMS IN CMOS

Monthly net income of PhDscholarship (max 36 months)

€ 1400.0

In case of a change of the welfare rates during the three-year period, the amount could be modified.

Context of the research activity

Motivation and objectives of the research in this field

This research activity is within the field of high-frequency wireless systems for MIMO radars. In this research, the PhD candidate will study the issues of radar systems at system level and will address the design of mm-wave frequency synthesizers, power amplifiers and low-noise amplifiers in CMOS processes.
<https://www.deib.polimi.it/eng/research-lines/details/108>

Methods and techniques that will be developed and used to carry out the research

In this research, the candidate will adopt the so called digitally-assisted analog design. In this new paradigm of design, complex background calibration algorithms (within the analogue sub-blocks) are used to mitigate the impairments of analogue circuits. This approach is intended for scaled CMOS processes, where the cost of digital blocks decreases and the performance of unassisted analogue blocks may be degraded.

Educational objectives

In this field, the main challenge is to design mixed-signal RF circuits in CMOS by taking advantage of advanced DSP techniques. So, the student needs to be educated in different areas such as DSP algorithms, analogue/RF design, digital front-end and back-end design.

Job opportunities

Our former Ph.D. graduates are currently working as senior designers and directors for major semiconductor



	companies, mainly in North America.
Composition of the research group	2 Full Professors 1 Associated Professors 2 Assistant Professors 9 PhD Students
Name of the research directors	Salvatore Levantino

Contacts	
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Additional support - Financial aid per PhD student per year (gross amount)	
Housing - Foreign Students	--
Housing - Out-of-town residents (more than 80Km out of Milano)	--

Scholarship Increase for a period abroad	
Amount monthly	700.0 €
By number of months	6

Additional information: educational activity, teaching assistantship, computer availability, desk availability, any other information
<p>EDUCATIONAL ACTIVITIES (purchase of study books and material, including computers, funding for participation in courses, summer schools, workshops and conferences): financial aid per PhD student.</p> <p>TEACHING ASSISTANTSHIP: availability of funding in recognition of supporting teaching activities by the PhD student. There are various forms of financial aid for activities of support to the teaching practice. The PhD student is encouraged to take part in these activities, within the limits allowed by the regulations.</p> <p>COMPUTER AVAILABILITY: individual use.</p> <p>DESK AVAILABILITY: individual use.</p>