



PhD in INGEGNERIA DELL'INFORMAZIONE / INFORMATION TECHNOLOGY - 40th cycle

Research Area n. 2 - Electronics

THEMATIC Research Field: FREQUENCY GENERATION AT MM-WAVE FOR 6G WIRELESS

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 frequency generation at mm-wave frequencies, targeting the design of low-phase-noise frequency synthesizers and frequency multipliers in an advanced SiGe BiCMOS process to provide the local oscillator of wireless transceivers. The target is to achieve sub-10fs frequency sources in silicon to enable high-capacity wireless links with data rates beyond 100Gb/s.
Methods and techniques that will be developed and used to carry out the research	The analysis will be carried out using system theory and dedicated tools for system analysis. Then, the functionality and performance of the new conceived system will be demonstrated in test chips and experimentally verified.
Educational objectives	The student will be trained in different disciplinary areas such as electromagnetic fields, analogue and digital circuit design, chip assembly, testing measurements.
Job opportunities	Designer with major semiconductor companies and research centres.
Composition of the research group	4 Full Professors 1 Associated Professors 5 Assistant Professors 10 PhD Students
Name of the research directors	Prof. Salvatore Levantino



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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><u>EDUCATIONAL ACTIVITIES</u> (purchase of study books and material, including computers, funding for participation in courses, summer schools, workshops and conferences): financial aid per PhD student. 5.707,20 Euro per student</p> <p><u>TEACHING ASSISTANTSHIP</u>: 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><u>COMPUTER AVAILABILITY</u>: 1st year: Yes 2nd year: Yes 3rd year: Yes</p>