

PhD In Information Technology

Research Area n. 2 Title: Electronics

Research Field: “Advanced Systems For X- And Gamma Ray Detection And Imaging Based On Semiconductor Detectors”

Scholarships and Financial support	
Monthly net income of PhD scholarship (max 36 months)	€. 1.200 (In case of a change of the welfare rates during the three-year period, the amount could be slightly modified)
Number of scholarships	1
Beginning of PhD	1/5/2017
Deadline for application	13/03/2017
Context of the research activity	
Motivations and objectives of the research in this field	An intense and worldwide scientific research activity is continuously running on semiconductor radiation detectors for X and gamma ray spectroscopy and imaging due to their widespread applications in many scientific as industrial fields. The objectives of this research are related to the theoretical and experimental study of different types of innovative semiconductor detectors with the goals to meet the requirements of several applications such as high energy and position resolutions, operation close to room temperature and/or at high photon fluxes.
Methods and techniques that will be developed and used to carry out the research	Electrical as spectroscopic experimental characterization of detectors and systems will be performed. Theoretical models will be studied and developed. Ultra low noise electronics will be developed and used to achieve state of the art performances.
Educational objectives	The PhD student will acquire skills in the experimental characterization of semiconductor detectors and imaging systems using a wide variety of laboratory

	instrumentation. Collaboration in team with other PhD students, post-doc and with external research groups will complete the training.
Job opportunities	At the end of the PhD, the student will be ready to consider job opportunities in academic, research institutions or companies requiring researchers or engineers skilled in semiconductor devices, radiation detectors or electronic instrumentation.
Composition of the research group	1 Associate Professor 1 Post-Doc 3 PhD student
Names of the research directors	Prof. Giuseppe Bertuccio
E-mail address, phone number and web-page	Giuseppe.Bertuccio@polimi.it Tel. +39 031.332.7346 http://www.deib.polimi.it/eng/people
List of Universities, Companies, Agencies and/or National or International Institutions that are cooperating in the research	1. XNEXT Advanced Inspection Technology www.x-next.com 2. National Institute of Nuclear Physics 3. National Research Council – IMEM - Parma
Additional support	
<u>Educational activities</u> (purchase of study books and material, funding for participation to courses, summer schools, workshops and conferences): financial aid per PhD student per year	2nd year: 1.370 euro per student 3rd year: 1.370 euro per student
<u>Teaching assistantship</u> : availability of funding in recognition of support to 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.
<u>Computer availability</u> :	1 st year: <i>individual use</i> 2 nd year: <i>individual use</i> 3 rd year: <i>individual use</i>
<u>Desk availability</u> :	1 st year: <i>individual use</i> 2 nd year: <i>individual use</i> 3 rd year: <i>individual use</i>