

# PhD in Bioengineering - XXVII

## Research Field: Bioengineering

<b>Scholarships and Financial support</b>	
Monthly net income of each PhD scholarship	€ 1.202,84
Award which may be assigned at the end of the last year of the PhD course, upon verification of satisfactory results in the PhD activities	0
<b>Context of the research activity</b>	
Number of PhD theses carried out in this research field in the last 3 years	60
Motivations and objectives of the research in this field	<p>Thesis are available in the following research areas:</p> <ul style="list-style-type: none"> <li>- <i>Biomimetic engineering and micro-nano technologies</i> Molecular and cellular engineering, Biomaterials, Tissue Engineering, Bioartificial Interfaces and Devices.</li> <li>- <i>Rehabilitation Engineering and Technology</i> Neuro prostheses. Movement analysis. Motor control. Respiratory system bioengineering. Central Nervous System signal and image processing for rehabilitation. Computational Biomechanics</li> <li>- <i>Technologies for Therapy</i> Computer assisted surgery and radiotherapy. Cardiosurgery mock loops. Optimisation of artificial organs. Deep brain stimulation</li> <li>- <i>Physiological Modelling and non-Invasive Diagnostics</i> Cardiovascular modelling and imaging. Biomedical signal and image processing. E-Health</li> </ul> <p>More details of the research areas are illustrated in <a href="http://www.biomed.polimi.it">http://www.biomed.polimi.it</a></p>
Methods and techniques that will be developed and used to carry out the research	Research focuses both on theoretical models, methods and technologies to support design of applications, software and hardware systems, together with tools and prototypes development. The involvement of industrial and clinical partners reinforces the mix between theory and application which is strength of our PhD.
Educational objectives	The supervisor and his research group support the research development. Seminars and courses encourage an interdisciplinary approach. Laboratory activity completes the research path. Students are also encouraged to spend a period of study abroad (with availability of an additional financial support). <a href="http://www.biomed.polimi.it/phd">www.biomed.polimi.it/phd</a>
Job opportunities	Job opportunities include research both in academic and private institutions in Italy and abroad, and in industry. Spin-off and startups from research results are encouraged. Employment in this field offers various interesting opportunities.
Composition of the research group	Number of Full Professors 7 Number of Associated Professors 10

	Number of Assistant Professors 20 Number of Post-Docs 15 Number of PhD students 60 Number of contracted researchers 35
Names of the research director	Prof. Maria G. Signorini
E-mail address, phone number and web-page	<a href="mailto:mariagabriella.signorini@polimi.it">mariagabriella.signorini@polimi.it</a> , 39 02 23993328 <a href="http://www.biomed.polimi.it/phd">www.biomed.polimi.it/phd</a>
List of 5 Universities, Companies, Agencies and/or National or International Institutions that are cooperating in the research	1. Imperial College, London 2. MIT Boston, USA 3. Philips, Eindhoven 4. Fresenius Medical Care – Europe and USA 5. ETH Zurich
<b>Additional support</b>	
<u>Housing:</u> Financial aid per PhD student per year	<u>Foreign students</u> 1 <sup>st</sup> year: max 2500 euros per student 2 <sup>nd</sup> year: supported by Tutor 3 <sup>rd</sup> year: supported by Tutor * 1 <sup>st</sup> year foreign students receive also a support from the PhD School in an equal amount to that given by the Department and up to max 2500 euros, according to the School regulations
<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	The PhD Program finances max 800 euros per student, per year. Guarantees a further support of 1000 euros average per student, per year, from other sources (namely tutor research fundings). The PhD program encourages additional support by research groups both for educational and scientific activities.
<u>Teaching assistanship:</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 <sup>st</sup> year: <i>individual use</i> 2 <sup>nd</sup> year: <i>individual use</i> 3 <sup>rd</sup> year: <i>individual use</i>
<u>Desk availability:</u>	1 <sup>st</sup> year: <i>individual use</i> 2 <sup>nd</sup> year: <i>individual use</i> 3 <sup>rd</sup> year: <i>individual use</i>