POLITECNICO DI MILANO

PhD in BIOINGEGNERIA / BIOENGINEERING - 38th cycle

Number of scholarship offered	8
Department	DIPARTIMENTO DI ELETTRONICA, INFORMAZIONE E BIOINGEGNERIA

Description of the PhD Programme

The PhD Programme aims at developing scientific profiles who intend to practice their majoractivities in the field of Bioengineering. It addresses theoretical and experimental activities in 4major research areas:Biomimetic Engineering and Micro-nano Technologies, RehabilitationEngineering and Technology, Technologies for Therapy, and Physiological Modelling and non-Invasive Diagnostics. More specific areas include, but are not limited to: Molecular and cellularengineering, Biomaterials, Tissue engineering, Bio-artificial interfaces and devices, Neuro-prostheses, Movement analysis, Cardiovascular and respiratory system bioengineering, Centralnervoussystemsignalandimageprocessingforrehabilitation,Biomechanics,Computationalfluid dynamics, Computer assisted surgery and radiotherapy, Artificial organs, Implantable devices,Biomedical signal and image processing, E-Health, Bioinformatics, functional genomics andmolecular medicine. Research focuses both on theoretical models, methods and technologies tosupport design of applications, software and hardware systems, together with tools and prototypedevice development. The involvement of industrial and clinical partners reinforces the mixbetween theory and application which is the strength of this PhD.Stage periods in distinguishedresearch institutes in Italy and abroad are an essential feature of the PhD candidatetraining. Scientific and research activities of PhD Bioengineering candidates are stronglygrounded on research laboratories located inside and outside the Departments in cooperationwith other research institutions and university hospitals. Publications in scientific peer-reviewedjournals, participation to international projects and the numerous collaborations confirm theexcellence level of the activities carried out in this PhD programme.

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OPEN SUBJECT Research Field: BIOINGEGNERIA / BIOENGINEERING

Monthly net income of PhDscholarship (max 36 months)
€ 1250.0 In case of a change of the welfare rates or of changes of the scholarship minimum amount from the Ministry of University and Reasearch, during the three-year period, the amount could be modified.

Context of the research activity	
Motivation and objectives of the research in this field	The PhD programme aims at developing scientific profileswho intend to practice their major activities in the field of Bioengineering. It addresses theoretical and experimental activities in 4 major research areas: • Biomimetic Engineering and Micro-Nano Technologies • Rehabilitation Engineering and Technology • Technologies for Therapy • Physiological Modelling and non-Invasive Diagnostics More specific areas include, but are not limited to: • Molecular and cellular engineering • Biomaterials • Tissue engineering • Bio-artificial interfaces and devices • Neuroprostheses • Movement analysis • Cardiovascular and respiratory system bioengineering • Central nervous system signal and image processing forrehabilitation. • Biomechanics • Computational fluid dynamics • Computer assisted surgery and radiotherapy • Artificial organs

	• Implantable devices • Biomedical signal and image processing • E-Health • Bioinformatics, functional genomics and molecular medicine http://www.phdbioengineering. polimi.it/
Methods and techniques that will be developed and used to carry out the research	Research focuses on theoretical models, methods and technologies to support design of applications, software and hardware systems, together with tools and prototype device development. The involvement of industrial and clinical partners reinforces the mix between theory and application, which is the strength of this PhD programme. Stage periods in distinguished research institutes in Italy and abroad all over the world, are essential features in the PhD candidate training. Scientific and research activities of PhD candidates are strongly grounded on research laboratories located inside and outside the Departments, in cooperation with other research institutes and university hospitals.
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 studyabroad (with availability of an additional financial support). www.dottorato.polimi.it
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	10 Full Professors 24 Associated Professors 13 Assistant Professors 7 PhD Students
Name of the research directors	Any faculty member

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	625.0 €
By number of months	6

Additional information: educational activity, teaching assistantship, computer availability, desk availability, any other information
Increase in the scholarship for stays abroad: euro 625,00 per month, for up to 6 months