POLITECNICO DI MILANO

Politecnico di Milano

PhD Programme in Mechanical Engineering

Research Area n. 3: Engineering Design and Manufacturing for the Industry of the Future

Research Field: Product and process innovation in fastening industry

Scholarship and Financial support	
Monthly net income of PhD scholarship (max 36 months)	€ 1200 (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	01/05/2017
Deadline for application	10/03/2017
Context of the research activity	
Motivations and objectives of the research in this field	The objective of the research is to develop innovative products and processes in the fastening industry, in line with the vision and strategy of the funding company (www.clamp.it). On the product side this will involve the introduction of new materials, the integration of products with electronics components (RFID and others). The production processes will be analyzed in order to achieve better productivity and quality.

Methods and techniques that will be developed and used to carry out the research	The research will be developed by referring to both emerging and established methodologies and technologies such as: Collaborative creativity, BioInspired Design, TRIZ, Interactive Virtual Prototyping, Augmented Reality, Virtual Reality, Knowledge Based Engineering (KBE), multi-objective optimization. All activities will be performed in close collaboration with company's management.
Educational objectives	Operational competences on up-to-date methodologies and technologies for the development of innovative and user-friendly products. Capability to interpret technology evolution and the dynamics of product innovation. R&D skills for scientific and industrial applications. Soft skills about delivery of scientific talks, drafting of project reports and scientific papers, delivery of presentations to industry.
Job opportunities	The research experience in this area will nurture the ability to develop research activities within an academic and/or an industrial context, according to the specific objectives of the thesis. Therefore, career opportunities will be related to university research and educational position, industrial R&D departments, key roles in the product development cycle such as product manager, process manager etc.
Composition of the research group	Number of Full Professors: 3 Number of Associated Professors: 3 Number of Assistant Professors: 4
Names of the research directors	*Gaetano Cascini*
E-mail address, phone number and web-page	*gaetano.cascini@polimi.it* *+39 02 2399 8463* *www.mecc.polimi.it/en/phd*
List of Universities, Companies, Agencies and/or National or International Institutions that are cooperating in the research	CLAMP SRL

Additional support	
<u>*Funding for educational activities*</u> (purchase of study books and material, funding for participation in courses, summer schools, workshops and conferences): funding per PhD student per year	*2nd year: per student € 1370* *3rd year: per student € 1370*
<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>**:**	1st year: *individual use* 2nd year: *individual use* 3rd year: *individual use*
<u>*Desk availability*</u>**:**	1st year: *individual use* 2nd year: *individual use* 3rd year: *individual use*