POLITECNICO DI MILANO

PhD in INGEGNERIA DELL'INFORMAZIONE / INFORMATION TECHNOLOGY - 38th cycle

Research Area n. 4 - Telecommunications

PARTENARIATO PNRR Research Field: PHOTONIC INTEGRATED DEVICES FOR FUTURE TELECOMMUNICATIONS

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 project is in the framework of RESTART PARTENARIATO ESTESO RESEARCH AND INNOVATION ON FUTURE TELECOMUNICATION SYSTEMS AND NETWORKS TO MAKE ITALY MORE SMART CUP D43C22003080001 Decreto di Concessione D.D. 1549 del 11/10/2022 Activities related to PNRR "PE14 – Telecommunications of the future" projects of the photonic Spoke. Objectives: conception, design, characterization and real time control of integrated photonic programmable circuits for signal processing on chip.
Methods and techniques that will be developed and used to carry out the research	The activities are both theoretical/numerical and experimental and concern the design of photonic integrated circuits, assembly, algorithms for dynamic chip control and implementation, thermal management, electronic boards for control and data acquisition. Activities in clean room, both front end (deposition, etching) and back end (assembly and packaging). The research will be developed mainly in PoliMi (Photonic Devices Lab and Polifab) with short (weeks) period in the companies.

Educational objectives	Education objectives are multidisciplinary and Multiphysics: photonics, electronics, software, control theory, thermal management, signal processing. Acquire experience in clean room working on micro and nanotechnologies.
Job opportunities	Opportunities in companies and research centers operating in photonics at large: production of systems with (integrated) photonic circuits or producing the photonic circuits. Huge offer of positions on the international market. In Italy: Huawei, Cisco, STm, AFR, Leonardo, Nokia, etc.
Composition of the research group	1 Full Professors 1 Associated Professors 0 Assistant Professors 4 PhD Students
Name of the research directors	Andrea Melloni

Contacts
andrea.melloni@polimi.it

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
RESTART, SPOKE 1 CNR (HePIC and RIGOLETTO projects) LIST OF UNIVERSITIES, COMPANIES, AGENCIES AND/OR NATIONAL OR INTERNATIONAL INSTITUTIONS THAT ARE COOPERATING IN THE RESEARCH: SSSA Pisa; Politecnico di Bari EDUCATIONAL ACTIVITIES (purchase of study books and material, including computers, funding for participation in courses, summer schools, workshops and conferences): financial aid

per PhD student
5.707,13 Euro

TEACHING ASSISTANTSHIP: (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.

COMPUTER AVAILABILITY: individual use

DESK AVAILABILITY: individual use

D.D. 341 del 15/03/2022 Avviso pubblico per la presentazione di Proposte di intervento per la creazione di "Partenariati estesi alle università, ai centri di ricerca, alle aziende per il finanziamento di progetti di ricerca di base" - nell'ambito del Piano Nazionale di Ripresa e Resilienza, Missione 4 "Istruzione e ricerca" - Componente 2 "Dalla ricerca all'impresa" - Investimento 1.3, finanziato dall'Unione europea - NextGenerationEU