POLITECNICO DI MILANO

PhD in INGEGNERIA DELL'INFORMAZIONE / INFORMATION TECHNOLOGY - 37th cycle

Research Area n. 4 - Telecommunications

THEMATIC Research Field: MULTILAYER COATINGS FOR ANTIREFLECTION AND MICROMIRROR MEMS FOR LIR WAVELENGTHS

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	The research covers the scientific and industrial needs to realize multilayer thin films for eliminating or increasing the reflectivity in a broad wavelength range (UV to LWIR) from photonics and electronics devices. The approach follows a complete multiphysic methodology. Numerical evaluations (design) and characterizations of the device.
Methods and techniques that will be developed and used to carry out the research	Design and analysis of thin multilayer films for antireflection and mirror application in a wide wavelength range. Deposition techniques with sputtering, evaporators and CVD. Material analysis. Device characterization. Simulation with custom software and commercial software.
Educational objectives	The educational objectives cover the entire field of materials and fabrication processes for photonics with a multiphysic approach. Photonics, microwave, electronics, thermal and software are routinely used in the group. The student will work in an international environment.
Job opportunities	Job opportunities in technology and material science for photonics are huge worldwide. STm recruits regularly PhD for R&D and production.All my previous PhD found a job in the field of photonics, 2 in USA, 2 in Canada and 3 in Italy.

Composition of the research group	1 Full Professors 1 Associated Professors 1 Assistant Professors 4 PhD Students
Name of the research directors	Andrea Melloni (Politecnico), Laura Castoldi (STM)

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	564.01 €
By number of months	6

Additional information: educational activity, teaching assistantship, computer availability, desk availability, any other information

The PhD students will work in the Photonic Devices Lab and in Polifab, Via Colombo 81 and, for short periods in STmicroelectronics (Agrate Brianza - MB). The activity is currently ongoing with a PhD.

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 per year
2nd year: euros per student (1534)
3rd year: euros per student (1534)

TEACHING ASSISTANSHIP: (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:
1st year: individual use
2nd year: individual use
3rd year: individual use

DESK AVAILABILITY:
1st year: individual use
2nd year: individual use
3rd year: individual use