



PhD in FISICA / PHYSICS - 37th cycle

THEMATIC Research Field: INVESTIGATION OF PHOTOPHYSICAL PROCESSES IN METAL HALIDE PEROVSKITE SEMICONDUCTORS

Monthly net income of PhDscholarship (max 36 months)

€ 1300.0

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

Semiconducting metal halide perovskites, and devices based on them, will be the primary technology under investigation, given its potential to represent the merging point between the efficient inorganic and the chameleonic organic electronics. In this class of materials, defects are sensitive to the device operating conditions, thus, the control of structure-properties relationship, especially at interfaces, becomes elusive, and the prediction of device operation, necessary to engineer reliable systems, is not possible without an "in vivo" approach.

Methods and techniques that will be developed and used to carry out the research

The PhD candidate will study the electronic structure and the physic of defects of pervskite semiconductors by study how they evolve in time over a timescale from fs to microsecond and in spac. A wide set of cascade phenomena will be followed as charge transfer and localization, band bending and Fermi level equalization, in time and space at buried interfaces in operating devices.

Educational objectives

Mastering of experimental techniques which include fs lasers and photoemission microscope (PEEM)

Job opportunities

Academic Research
R&D industry
Teaching in STEM

Composition of the research group

1 Full Professors
0 Associated Professors
4 Assistant Professors
2 PhD Students



Name of the research directors	Annamaria Petrozza
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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	566.36 €
By number of months	6

Additional information: educational activity, teaching assistantship, computer availability, desk availability, any other information
<p>Educational activities per year :</p> <p>1st year: 0 2nd year: 1534 euros per student 3rd year: 1534 euros per student or 1022 euros per student for each year.</p> <p>Teaching assistantship:</p> <p>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.</p> <p>Computer and Desk availability: shared use.</p>