



ISTITUTO ITALIANO  
DI TECNOLOGIA

# PhD Program in Physics and Nanosciences

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## Curriculum Bio-NanoSciences

### *Functional Nanosystem Theme – cycle XXXVII*

#### **Development of low-dimensional material based light-driven nanoscale devices**

Tutor: Ilka Kriegel

Functional Nanosystems group's research implements different material science methods to produce and characterize novel hybrid nanomaterials and uses steady state and time-resolved spectroscopy and microscopy to unravel their interaction. The interdisciplinary research approach of the Functional Nanosystems group (<https://www.iit.it/research/lines/functional-nanosystems>) located between physics, nanochemistry, material science, spectroscopy and optoelectronics delivers a stimulating environment, representing the atmosphere of the Central Research Lab at IIT, one of the biggest research centers in Europe.

The hired PhD student is expected to fabricate hybrid low-dimensional material systems and devices (based on 2D materials and/or nanocrystals) in which light energy is permanently stored and released on demand or directly converted into useful energy. This research position is part of the ERC Starting Grant Light-DYNAMO (<https://cordis.europa.eu/project/id/850875>).

To perform successfully, potential candidates should enjoy working on a cutting-edge and interdisciplinary project. Candidates should have a M.Sc. or equivalent degree in Physics, Engineering, Chemistry or Materials Science and be interested in acquiring further skills in optical microscopy/spectroscopy, cleanroom work, device engineering and theoretical modeling and programming (e.g. Labview, python, COMSOL, matlab).

We explicitly encourage female applicants for this position. For further details concerning the research theme and any related questions, please contact Ilka Kriegel ([ilka.kriegel@iit.it](mailto:ilka.kriegel@iit.it)).