MIFP

MEDITERRANEAN INSTITUTE OF FUNDAMENTAL PHYSICS

Research Areas

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2D Crystals and Photovoltaics

Physics of two-dimensional crystals, including graphene, transition metal dichalcogenides, and their applications in photovoltaics and optoelectronics.

Condensed Matter Theory

Theoretical research on strongly correlated systems, superconductivity, thermoelectric effects, and phase transitions.

Exciton-polaritons

Research area present in homepage publication/news text.

Light-matter coupling

Core topic of PLMCN events.

Metamaterials

Core topic of TERAMETANANO and PLMCN-related events.

Metamaterials and Nanophysics

Research on electromagnetic metamaterials, terahertz emission, and nanophotonics for advanced optical applications.

Nanomaterials

Topic mentioned in STAR-2025.

Nanophotonics

Research on light-matter interaction at the nanoscale, including microcavities, polaritonics, and semiconductor nanostructures.

Organic semiconductors

Topic mentioned in TERAMETANANO.

Perovskites

Topic mentioned in TERAMETANANO and materials events.

Photovoltaics

Research area recurring in MIFP school/event titles.

Polaritonics

Study of exciton-polaritons in semiconductor microcavities, including Bose-Einstein condensation, polariton lasers, and superfluidity.

Quantum Optics

Quantum light in nanostructures, strong coupling regimes, and cavity quantum electrodynamics.

Quantum information

Topic mentioned in PLMCN descriptions.

Quantum light and nanophysics

Core topic of QLIN event.

Renewable energy materials

Core topic of NewMare - Amazonas 2025.

Semiconductor Physics

Fundamental properties of wide band gap semiconductors, GaN-based heterostructures, and excitonic effects in semiconductor systems.

Spintronics

Topic mentioned in STAR/New materials context.

Terahertz emission

Core topic of TERAMETANANO events.

Two-dimensional crystals

Core topic of ICP2DC events and 2D crystal schools/workshops.

Solid State Physics and Astrophysics

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Particle Physics and Gaseous Detectors

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Light-Matter Coupling and Nanostructures

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"fluctuation theory". Prof. Igor Lukyanchuk gave key contributions in the theory of superconductivity and theory of Dirac fermions in graphene. Prof. Aldo Di Carlo is a head of Laboratory of

Superconductivity and Quantum Transport

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Photovoltaics and Semiconductor Materials

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n the theory of superconductivity and theory of Dirac fermions in graphene. Prof. Aldo Di Carlo is a head of Laboratory of Photovoltaics, he currently works on organic solar cells. Prof. Daniele Sanvitto is a head of group of the optical spectroscopy of semiconductors. He is known for the recent discovery of the superfluidity of exciton-polaritons. Prof. Olivia Pulci is an expert in ab-initio calculations of the electronic structure and optical properties of solids. Dr. Galia Pozina is an expert in crystal growth a

Quantum Optics and Cavity Electrodynamics

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