

Welcome to the IAP Meeting 2nd Edition.

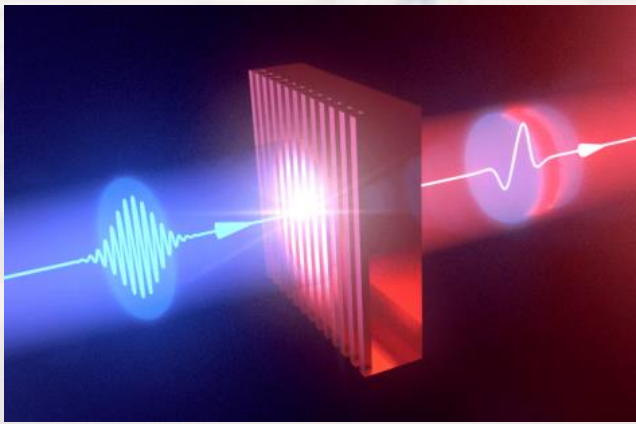
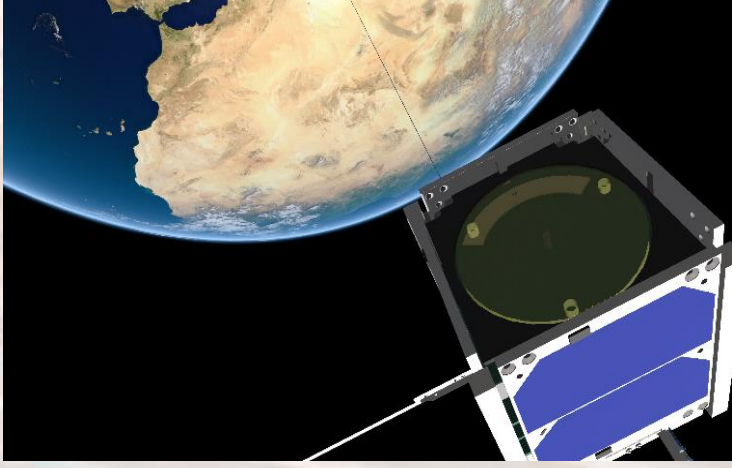
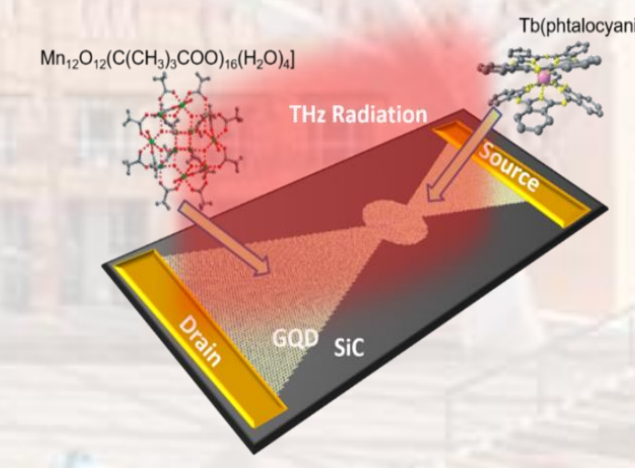
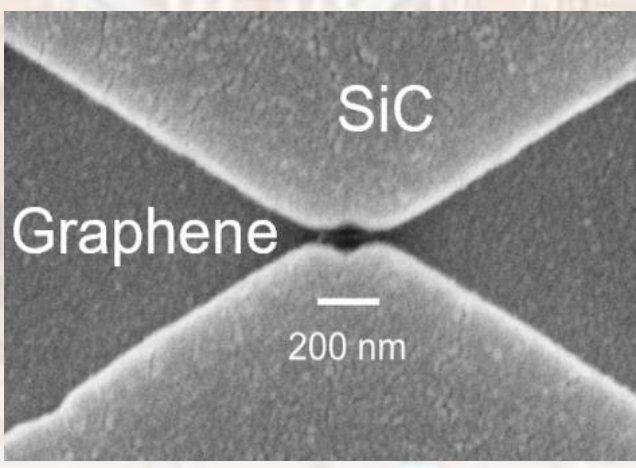
The IAP Meeting is conceived as a multidisciplinary forum that brings together researchers, academicians, industry professionals, and emerging scientists from across the world. Over these five days, from December 1 to 5, we will explore the theme:

"Era of Physics Innovations and Excellence: From Semiconductors, Terahertz, Photonics, Atomic Physics to Space Technology"

Our goal is to foster an environment of collaboration and exchange, where new ideas are born and young researchers are inspired to push the frontiers of applied physics. We aim to strengthen the scientific community in Morocco, across Africa, and globally

Major Topic Areas

- 2D Semiconductors Physics
- Terahertz Science and Photonics
- Nuclear and Reactor Physics
- Satellite Technology, Single Photon
- Detection, and CMB Exploration



Day I – 01 December

09.00 - 10.30 a.m	Registration, Welcoming and Introduction
9.00 .am	Registration
9.45 a.m	Opening
10:30 a.m	Coffee Break
10.45 - 11.15 a.m	Plenary Session I
10.45 a.m	Pavlo Sai, Plasmonic Crystals Tunable in Terahertz Range
11.15 - 12.15 p.m	2D Semi-conductors Physics I
11.15 a.m	Djuric Brice Talonpa Tchoffo, Modeling of the Chemical Vapor Deposition Synthesis of Phosphorene: A Molecular Dynamic Study
11.30 p.m	Naima ENNASSIRI, Quantum Transport Signatures of Gas Selectivity in Ultra-Narrow Graphene Nanoribbons: A Platform for Future Gated Devices
11.45 p.m	Nadia BENLAKHOUY, Angle-dependent chiral tunneling in biased twisted bilayer graphene
12.00 p.m	Jawad EL HAMDAOUI, Engineering Tunable Electronic and Photocatalytic Properties in MoSSe/AlN Heterostructures
2.00 - 2.30 p.m	Plenary Session II
	Marcin Bialek, From Weak to Strong Light-Matter coupling in the THz range

2.30 - 3.30 p.m	2D Semi-conductors Physics II
2.30 p.m	Dimougna PALAI, Investigation of the Electronic and Optical Properties of Type-I CdTe/Cd _{1-x} Mg _x Te Superlattices
2.45 p.m	Younes CHRAFIH, Multi-Scale Modeling of Doped Magnesium Hydride Nanomaterials for Hydrogen Storage Applications
3.00 p.m	Mohammed AMLIEH,Substrate and Defect Effects on the Mechanical Stability of Nanoporous Graphene for Water Desalination Applications
3.15 p.m	Ayoub OUAHHABI, Normal Ordering Problem Beyond the Quantum Harmonic Oscillator
3.30 p.m	Coffee Break
3.45 - 5.15 p.m	Poster Session

Day II – 02 December

09.15 - 10.30 a.m	2D Semi-conductors Physics III
9.15 a.m	Ferdinand NOUAYE, Black Phosphorene-Enhanced Raman Spectroscopy for Sensitive Detection of DNA Nucleotides.
9.30 a.m	Paul Vianel Djaba, Study of interactions between single-molecule magnets (SMMs) with graphene and black phosphorene
9.45 a.m	Rachid MASROUR, Optoelectronic Properties of Graphane: A Comparative DFT Study of Chair and Boat Conformations
10.00 a.m	Mohamed Amine Rhanbouri, Quantum Transport in Graphene Nanodevices: From Quantum Dots to Slit Interferometers
10.15 a.m	Abdessamie CHHIEB, Time fractional evolution of two superconducting charge qubits
10.30 a.m	Coffee Break
10.45 - 11.15 a.m	Plenary Session IV
10.45 a.m	Dmytro BUT, Ultimate Silicon THz Detectors and Sources
11.15 - 12.15 p.m	2D Semi-conductors Physics IIII
11.15 a.m	Nabil MENAI, Large intrinsic spin Hall effect in altermagnetic CrSb: A first-principles study
11.30 p.m	Hassan LAMSSADI, Enhanced Excitonic Emission by Lateral Heterointerface-Induced Dark Exciton Brightening in Transition Metal Dichalcogenide Monolayers
11.45 p.m	Mohammed EL HAMMOUMI, Self-strained MoS ₂ growth on optical fiber: exotic excitonic features
12.00 p.m	Saliha ABDESSAMIA, Investigating Quantum Correlations in Two-Qubit Heisenberg Models
2.30 - 3.30 p.m	2D Semi-conductors Physics IV
2.30 p.m	Rajesh DESAPOGUI, Probing Symmetry Breaking and Forbidden Mode Activation in Black Phosphorus Heterostructures
2.45 p.m	Houda JEBARI, Lead-free double perovskites Cs ₂ NaInX ₆ (X = Br, Cl, I) for solar energy conversion and photocatalytic H ₂ production: Insights from DFT
3.00 p.m	Getasew Admasu WUBETU, Ultrafast Microscopic and Spectroscopic Investigation of Halide Perovskite Solar Cells
3.15 p.m	Abdulsalam Aji SULEIMAN, Brightening Two-Dimensional Semiconductors via Spacer-Free Metal Screening
3.30 p.m	Coffee Break
3.45 - 5.15 p.m	Poster Session

Day III – 03 December

09.00 - 09.30 a.m	Plenary Session V
	Samuel Simon ARAYA, The role of hydrogen and Power-to-X in the green transition
09.30 - 10.30 a.m	Nuclear and Reactor Physics I
9.30 a.m	Hicham ATMANI, Measurement of $W^\pm$ -boson differential cross-sections in proton-proton collisions with low pile-up data at $\sqrt{s} = 5.02\text{TeV}$ and 13TeV with the ATLAS detector
9.45 a.m	Othmane BOUHALI, Charge Asymmetry Induced Bias in Efficiency and Scale Factors Measurements With The ATLAS Detector at The LHC
10.00 a.m	Ayoub HMISSOU, Can the $(1+2)\text{HDM}$ Explain the 95 GeV Higgs Boson Excesses?
10.15 a.m	Bassim TAKI, Additional Higgs Bosons Near 95 GeV and 650 GeV in Extended Higgs Sectors
10.30 a.m	Coffee Break
10.45 - 11.15 a.m	Plenary Session VI
10.45 a.m	Abdallah LYOUSSI, Where Science meets Applications : Journey into the world of Nuclear Instrumentation and measurement
11.15 - 12.15 p.m	Nuclear and Reactor Physics I
11.15 a.m	Soumaya OULAD-BELAYACHI, Full Core Thermal-Hydraulic Analysis of the Moroccan TRIGA MARK II Reactor
11.30 p.m	Khawla SALIME, Vector-like Quark B Bounds at the LHC: Impact of THDM-II
11.45 p.m	Abderrahman RACHIDI, Monitoring Approach for the Design of Small Modular Reactors
12.00 p.m	Ahmed EDDYMAOUI, Search for Magnetic Monopoles with the Complete ANTARES Dataset
2.00 - 2.30 p.m	Plenary Session VII
2.00 p.m	SaeJune PARK, From free-space to on-chip terahertz spectroscopy of metamaterials

2.30 - 3.30 p.m	Nuclear and Reactor Physics II
2.30 p.m	Khalid GOURE, Probing Charged Higgs Bosons at a Muon Collider
2.45 p.m	Loubna EL OUAOURTI, Staggering Effect in Even-Even Nuclei within an Axially Symmetric Collective Model
3.00 p.m	Asmae ETTOUFI, Modeling the behavior of Rn-222 in waterhole and soil, through the toolkit Geant4 simulation
3.15 p.m	Imane Moumen, Systematic study of α -decay process within the position-dependent mass formalism
3.30 p.m	Coffee Break
3.45 p.m	Mohammed DRISSI ELBOUZAIDI, Application of Artificial Neural Networks to Automate the Characterization of Radioisotopes in Moroccan Phosphate Rocks Using Gamma Detector Data.
4.00 p.m	Youssra BEN LAZRAK, Monte Carlo Voxelized Dosimetry of Breast Tumors: Influence of Morphology, Density, and Radionuclide Selection on S-Values
4.15 p.m	Abdlghani ELOUARDI, Charge Asymmetry Induced Bias in Efficiency and Scale Factors Measurements With The ATLAS Detector at The LHC
4.30 p.m	Mohamed ECH-CHAOUY, Relaxing Vector-Like Top Quark Mass Limits through Exotic Decays in the Type-II Two-Higgs-Doublet Model
4.45 p.m	Badr ERRABYIY, Design of reactor for production biogas and hydrogen from organic waste
5.00 p.m	Mbark BERROUJ, Exploring vector-like top quark pair production via charged Higgs decays in multi-b-jet and opposite-sign dilepton final state at the LHC

Day IV – 04 December

09.00 - 09.30 a.m	Plenary Session VIII
	Thierry Taliercio, Exploring quantum plasmonics using heavily doped semiconductors
09.30 - 10.30 a.m	Terahertz Science and Photonic
9.30 a.m	Dukhyung Lee, Multimode Magnetoplasmon Formation Induced by a THz Slot Antenna and Their Coupling to the Antenna
9.45 a.m	Bilal AGOUTANE, Evaluating the Performance of a Transparent MIMO Nano-Antenna for Wireless Health: Addressing Terahertz Challenges in Integrated Medical Device Networks
10.00 a.m	Khalid TALBI, Analysis of Quantum Correlations in a Three-Level Laser
10.15 a.m	Nabil LABCHIR, Optimized characterization methods for nanoimprinted GaN-based pillar arrays on 200 mm wafers: Application to μLEDs
10.30 a.m	Coffee Break
10.45 - 11.15 a.m	Plenary Session IX
10.45 a.m	Maxime BERNIER, THz spectroscopy and Imaging: from theory to applications
11.15 - 12.15 p.m	Terahertz Science and Photonic
11.15 a.m	Wojciech Julian PASEK, Consequences of band mixing and non-parabolicity for the formation of the multisubband plasmon modes in semiconductor quantum wells
11.45 p.m	Oussama TATA, Multisubband Plasmons in InAs/GaSb Broken Gap Quantum Wells
2.00 - 2.30 p.m	Plenary Session X
2.00 p.m	Leonora KARDUM, the Q & U Bolometric Interferometer for Cosmology
2.30 - 3.30 p.m	Space Science
2.30 p.m	Redouane EL OUARDI, Exploring Late-Time Cosmic Acceleration Using Machine Learning
2.45 p.m	Ghizlane EZ-ZOBAYR, Measurement of light-by-light scattering and Electron Identification efficiencies in ultraperipheral Pb+Pb collisions with the ATLAS detector at the LHC
3.00 p.m	Dalale MHAMDI, Cosmological Constraints on Power-Law and Exponential Models in f(Q) Gravity
3.15 p.m	Youssef AKARNE, Hybrid SSA-MPC Autonomous Energy Management for CubeSat EPS in LEO
3.30 p.m	Coffee Break
3.45 - 4.15 p.m	Plenary Session XI
3.45 p.m	Benjamin BERINGUE, Probing the Early Universe with the Simons Observatory and LiteBIRD
4.15 p.m	Youssef Moulane, Exploring CMB polarization with QUBIC
4.30 p.m	Aziz QAZBOUR, Applying Three-PSF Interferometric Apodization by Homothety (IAH) to the Habitable Worlds Observatory Apertures (EAC2 and EAC3)
4.45 p.m	Yahya LADGHAMI, Black Holes Thermodynamics in AdS/CFT correspondence
5.00 p.m	Distribution of certificates to participants
7.00 p.m	GALA DINNER
	Gala Dinner: Double Tree by Hilton

Day V – 05 December

9.00 am - 12.30 p.m: Excursion to Marrakech