KINGDOM OF MOROCCO

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HASSAN II ACADEMY OF SCIENCE AND TECHNOLOGY

Program of the
Quantum Physics School for Young Researchers
December, 16-19, 2025

1st Day: December 16th, 2025
Location: Faculty of Sciences, Mohammed V University, Rabat

08 :00-09 :00	**Registration and Welcoming of the Participants**

09:00-09:15	**Welcome address** **Dean of Faculty of Sciences** **President of Mohammed V University in Rabat** **Permanent Secretary of the Hassan II Academy of Sciences and Technology**
09 :15-10:45	**Tribute Session in Honor of the Late Professor Ouazzani BELMAHI** **Opening Tribute Speech dedicated to the memory of Professor Ouazzani BELMAHI and conference** **Delivered by** **Omar Fassi-Fehri** **Testimonies in Honor of Professor Ouazzani BELMAHI** **Presented by:** **El Mokhtar Essassi** **Abdelilah Benyoussef**
Break	
11 :00-11:45	**Session I : Quantum Optics and Quantum Technologies** **Laser Cooling of Atomic Gases: from Optical Molasses to Atom interferometry Part I** **Jean Dalibard** **Professor at Collège de France and Kastler Brossel Laboratory**
11:45-12:00	**Discussion**
12:0012:15	**Break**
12 :15-13:00	**Laser Cooling of Atomic Gases: from Optical Molasses to Atom interferometry Part II** **Jean Dalibard** **Professor at Collège de France and Kastler Brossel Laboratory**

13:00- 13:15	Discussion
13:15- 14:30	Lunch Break
14:30- 15 :15	Unveiling the All-Optical Switching Behavior of Selected Advanced Multifunctional Materials for Emerging Nonlinear Optical and Laser Applications Bouchta Sahraoui University of Angers, , Photonics Laboratory LPhiA, SFR MATRIX,
15:15- 15:30	Discussion
15:30- 15:45	Break
	Session II : Quantum Information
15:45- 16:30	Principle of quantum information theory Part I Mohammed Daoud Faculté des Sciences, Université Ibn Tofail, Kénitra
16:30- 16:45	Discussion
16:45- 17:00	Break
17 :00- 17:45	Principle of quantum information theory Part II Mohammed Daoud Faculté des Sciences, Université Ibn Tofail, Kénitra
17:45- 18:00	Discussion

2th day : December 17th, 2025
Location: Hassan II Academy of Science and Technology, Rabat

	Session III : Quantum effect at macroscopic scale
09 :00- 09 :45	Quantum Gases: Macroscopic Coherence and Superfluidity Part I Jean Dalibard Professor at Collège de France and Kastler Brossel Laboratory
09:45- 10:00	Discussion
10:00- 10:15	Break
10 :15- 11 :00	Quantum Gases: Macroscopic Coherence and Superfluidity Part II Jean Dalibard Professor at Collège de France and Kastler Brossel Laboratory
11:00- 11:15	Discussion
11:15- 11:30	Break
	Session IV : Quantum Electrodynamics
11 :30- 12 :15	Quantum Electrodynamics Part I Latifa Elouadrhiri Jefferson Lab in Newport News, Virginia, USA
12:15- 12:30	Discussion
12:30- 14:30	Lunch Break
14 :30- 15 :15	Quantum Electrodynamics Part II Latifa Elouadrhiri Jefferson Lab in Newport News, ViDirginia, USA
15:15- 15:30	Discussion
15:30- 15:45	Break

15 :45- 16 :30	Quantum Electrodynamics Part III Latifa Elouadrhiri Jefferson Lab in Newport News, Virginia, USA
16:30- 16:45	Discussion
16:45- 17:00	Break
17:00- 18 :00	Poster Session

3nd day : December 18th, 2025

Location: Hassan II Academy of Science and Technology, Rabat

	Session V: Nucleon Structure Through Electron Scattering
09 :00- 09 :45	Nucleon Structure Part I Latifa Elouadrhiri Jefferson Lab in Newport News, Virginia, USA
09:45- 10:00	Discussion
10:00- 10:15	Break
10 :15- 11 :00	Nucleon Structure Part II Latifa Elouadrhiri Jefferson Lab in Newport News, Virginia, USA
11:00- 11:15	Discussion
11:15- 11:30	Break
11 :30- 12 :15	Nucleon Structure Part III Latifa Elouadrhiri Jefferson Lab in Newport News, Virginia, USA
12:15- 12:30	Discussion
12:30- 14:00	Lunch Break
	Session VI : Particle physics
14 :00- 14 :45	Quantum field theory and particle physics Driss Benchekroun University Hassan II, Casablanca
14:45- 15:00	Discussion
15:00- 15:15	Break
	Session VII : Quantum Information

15 :15- 16 :00	Entropy and quantum information Part I Mostapha Mansour Faculté des Sciences Aïn Chock, Université Hassan II, Casablanca
16:00- 16:15	Discussion
16:15- 16:30	Break
16 :30- 17 :15	Entropy and quantum information Part II Mostapha Mansour Faculté des Sciences Aïn Chock, Université Hassan II, Casablanca
17:15- 17:30	Discussion
17h30- 17:45	Break
17 :45- 18 :30	QUANTUM COMPUTING: GROVER'S ALGORITHM - APPLICATIONS Mohamed Bennai Faculté des Sciences Ben M'Sick, Université Hassan II, Casablanca
18 :30- 18 :45	Discussion

4rd day : December 19th, 2025
Location: Hassan II Academy of Science and Technology, Rabat

09 :00-09 :45	**Session VIII : Quantum Computing** Introduction to Quantum Computing Pince Koree Osei African Institute for Mathematical Sciences (AIMS), Ghana
09:45-10:00	Discussion
10:00-10:15	Break
10:15-11:00	Topological Quantum Computing Part I Pince Koree Osei African Institute for Mathematical Sciences (AIMS), Ghana
11:00-11:15	Discussion
11:15-11:30	Break
11:30-12:15	Topological Quantum Computing Part II Pince Koree Osei African Institute for Mathematical Sciences (AIMS), Ghana
12:15-12:30	Discussion
12:30-12:45	Lunch Break
	Session IX: Applications in Material Science and Nanotechnology
14 :15-15:00	Optoelectronic Properties of Quantum Dot for Photonics Applications Izeddine Zorkani Université Sidi Mohammed Ben Abdellah, Fès
15:00-15:15	Discussion
15:15-15:30	Break
15 :30-16 :15	Computational Study of 2D Materials Using Density Functional Theory: Applications to Energy Storage Systems Abdelmajid Ainane Université Sultan Moulay Ismail, Meknès
16:15-16:30	Discussion
16:30-16:45	Break
16:45-17:30	Poster Session
17:30-18 :00	Closing ceremony