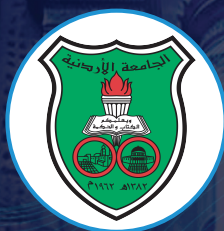



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**THE 10th
INTERNATIONAL PETRA SCHOOL OF PHYSICS
(PSP10)**

Scientific Program

"Quantum Computing: Theory and Applications"

9-13 OCTOBER, 2023

Amman, Irbid, Petra, JORDAN

Under the Patronage of His Royal Highness

Prince El Hassan bin Talal

The 10th International Petra School of Physics (PSP10)

“Quantum Computing: Theory and Applications”

Amman, Irbid, Petra, JORDAN

October 9-13, 2023

Scientific Program

First Day: Monday 9/10/2023

The University of Jordan, Amman (Ahmad Al Louzi Auditorium)

<u>Time</u>	<u>Activity</u>
9:00-10:00	<u>Registration</u>
10:00-10:45	<u>Opening Ceremony</u>
	<u>Royal Anthem</u>
	<u>Recitation of verses from the Holy Quraan</u>
	<u>Speeches:</u>
	Prof. Sami Mahmoud, School's Chairman
	Prof. Humam Ghassib, TWAS representative
	Prof. Islam Massad, President of Al Yarmouk University
	H.E Prof. Nathir Obeidat, President of the University of Jordan
H.R.H Prince El Hassan bin Talal	
	<u>The Honorary Shields</u>
10:45-11:15	<u>Coffee Break</u>
Session Chair	Prof. Humam Ghassib, The University of Jordan
11:15-12:15	<u>JAW-SHEN TSAI</u> Physics of superconducting qubit
12:15-14:15	<u>Lunch</u>

Session Chair	Nidal Ershaidat (The University of Jordan) Abdel-Fatah Lehlooh (Yarmouk University)
14:15-15:15	<u>NORMAN BIRGE</u> Ferromagnetic Josephson Junctions for Cryogenic Memory
15:15-15:45	<u>Coffee Break</u>
15:45-16:45	<u>RAJIBUL ISLAM</u> Quantum information processing with trapped ions I

Second Day: Tuesday 10-10-2023

The University of Jordan, Amman (Ahmad Al Louzi Auditorium)

Time	Activity
Session Chair	Gheith Abandah (The University of Jordan) Ahmad Masadeh (The University of Jordan)
9:00-10:00	<u>NORMAN BIRGE</u> Spin-triplet supercurrent in ferromagnetic Josephson junctions
10:00-11:00	<u>RAJIBUL ISLAM</u> Quantum information processing with trapped ions II
11:00-11:30	<u>Coffee Break</u>
11:30-12:30	<u>THOMAS MONZ</u> Quantum engineering with trapped ions I
12:30-14:30	<u>Lunch</u>
Session Chair	Mahmoud Jaghoub (The University of Jordan) Walaa Al Tamimi (The University of Jordan)
14:30-15:30	<u>JAW-SHEN TSAI</u> Superconducting qubit: Application to quantum computer
15:30-16:00	<u>Coffee Break</u>
16:00-17:00	<u>THOMAS MONZ</u> Quantum engineering with trapped ions I

Third Day: Wednesday 11-10-2023

The University of Jordan, Amman (Ahmad Al Louzi Auditorium)

Time	Activity
Session Chair	Laila Abuhassan (The University of Jordan) Khaled Bodoor (The University of Jordan)
9:00-10:00	<u>JOHANNES POLLANEN</u> Hybrid quantum information systems with electrons on helium
10:00-10:30	<u>GUANRU FENG</u> Bringing quantum computer to life
10:30-11:00	<u>Coffee Break</u>
11:00-11:30	<u>FARHAN SAIF</u> Opto-mechanically controlled quantum memory efficiency and optical transistor
11:30-12:00	<u>BOULOS ALFAKES</u> Fabrication and characterization of superconducting qubits
12:00-14:00	<u>Lunch</u>
Session Chair	Dia-Eddin Arafah (The University of Jordan) Bashar Lahlouh (The University of Jordan)
<u>14:00-15:00</u>	<u>JOHN MORTON</u> Silicon spin qubits: Architectures from NISQ to fault tolerant QC
<u>15:00-15:30</u>	<u>Coffee Break</u>
<u>15:30-16:00</u>	<u>USAMA AL KHAWAJA</u> Simulating CNOT and Hadamard quantum logic gates using soliton collisions

Fourth Day: Thursday 12-10-2023

Yarmouk University, Irbid (Conference Hall)

Time	Activity
Session Chair	Abdullah Al-Sharif (Yarmouk University) Anas Ababneh (Yarmouk University)
<u>9:00-10:00</u>	<u>JOHN MORTON</u> Silicon spin qubits: Qubit control and read-out
<u>10:00-10:30</u>	<u>Coffee break</u>
<u>10:30-11:30</u>	<u>JOHANNES POLLANEN</u> Phononic bath engineering of a superconducting qubit
<u>11:30-12:00</u>	<u>FARHAN SAIF</u> Time-crystals in opto-mechanics
<u>12:00-14:00</u>	<u>Lunch</u>
Session Chair	Sami Mahmood (The University of Jordan) Khalid Al-Batayneh (Yarmouk University)
<u>14:00-15:00</u>	<u>Closing Session</u>
<u>15:00-20:30</u>	<u>Trip to Jerash & Dinner</u>

Fifth Day: Friday 13-10-2023

Time	Activity
<u>8:00</u>	Departure to Petra City
<u>11:00-18:00</u>	Petra Tour & Dinner
<u>18:00</u>	Departure to Amman