KAST 한국과학기술한림원
The Korean Academy of Science and Technology

האקדמיה הלאומית הישראלית למדעים
المجمع الوطني الإسرائيلي للعلوم والآداب
THE ISRAEL ACADEMY OF SCIENCES AND HUMANITIES

האקדמיה הלאומית הישראלית למדעים והאקדמיה הלאומית של דרום קוריאה
מתכבדות להזמינכם לכינוס משותף בנושא

The Israel Academy of Sciences and Humanities
and the Korean Academy of Science and Technology cordially invite you to the

Quantum Physics: From Fundamentals to Applications

בימים רביעי–חמישי י"ח–י"ט באלול תשפ"ב
Wednesday – Thursday, September 14–15, 2022

Wednesday, September 14, 2022

09:30 **Registration and coffee**

10:00 **Welcome addresses**

David Harel, President, Israel Academy of Sciences and Humanities

Ook Joon Yoo, President of The Korean Academy of Science and Technology

SESSION I

Chair: Amnon Aharony

10:20 **Joseph Avron**, Technion - Israel Institute of Technology
An Introduction to Zak Phase

11:00 **Sangjun Jeon**, Chung-Ang University
Engineering and Observation of Majorana Zero Modes

11:40 **Break**

Chair: Hadar Steinberg

12:00 **Ora Entin-Wohlman**, Tel Aviv University
Spin-Orbit Interactions and Topological Phase Factors

12:40 **Prof. Youngkuk Kim**, Sungkyunkwan University
First-Principles Study of Functional Topological Materials

13:20 **Lunch at the Israel Academy**

SESSION II

Chair: Wonho Jhe

15:00 **Moshe Goldstein**, Tel Aviv University
Photon-Instanton Collider Implemented by a Superconducting Circuit: Splitting a Single Photon

15:40 **Jeehoon Kim**, Pohang University of Science and Technology (POSTECH)
Anomalous Transport Properties in a Weyl Metal

16:20 **Break**

Chair: Eun-Gook Moon

16:40 **Yuval Oreg**, Weizmann Institute of Science
Phenomenological Theory of Correlated Insulators and Superconductivity in Twisted Bilayer Graphene

17:20 **Q-Han Park**, Korea University
Perfect Transfer of Waves

18:00 **Concluding remarks**

Thursday, September 15, 2022

09:30 **Gathering at the Israel Academy**

SESSION III

Chair: Moty Heiblum

10:00 **Shahal Ilani**, Weizmann Institute of Science
Imaging Hydrodynamic Electrons Flowing Without Landauer-Sharvin Resistance

10:40 **Su-Hyun Gong**, Korea University
Valley Pseudospin-Dependent Exciton-Photon Coupling in 2D Semiconductors

11:20 **Break**

Chair: Moshe Goldstein

11:40 **Beena Kalisky**, Bar Ilan University
Imaging Quantum Materials with Scanning SQUID Microscopy

12:20 **Eun-Gook Moon**, Korea Advanced Institute of Science and Technology (KAIST)
Identification of Quantum Spin Liquids with Topological Quantum Phase Transitions

13:00 **Lunch at the Israel Academy**

SESSION IV

Chair: Q-Han Park

14:30 **Avi Pe'er**, Bar Ilan University
Ultra Broadband Quantum Optical Technology - Sensing and Communication

15:10 **Yong-il Shin**, Seoul National University
Turbulence in Atomic Superfluid Gases

15:50 **Break**

Chair: Youngkuk Kim

16:10 **Hadar Steinberg**, Hebrew University of Jerusalem
Two-Dimensional Transition Metal Dichalcogenide Superconducting Devices

16:50 **Bohm-Jung Yang**, Seoul National University
Quantum Geometric Properties of Flat Band Systems

17:30 **Concluding remarks**

The conference will take place at
The Israel Academy of Sciences and Humanities,
43 Jabotinsky St., Jerusalem

The conference will be held in English

הרשמה
Registration

הכינוס יתקיים
בבית האקדמיה הלאומית הישראלית למדעים,
רחוב ז'בוטינסקי 43, ירושלים

ההרצאות יהיו בשפה האנגלית

האירוע יתקיים בכפוף להנחיות משרד הבריאות שיהיו בתוקף

הכניסה בהרשמה מראש, ללא תשלום ועל בסיס מקום פנוי | חניה עירונית ברחובות הסמוכים לאקדמיה

The conference will be conducted according to current Health Ministry regulations | Please register in advance

Admission is free of charge, on the basis of available seating | Paid on-street municipal parking is available in the vicinity of the Academy

Follow the Academy on social media עקבו אחר האקדמיה ברשתות החברתיות

בקרו בתערוכה "בית ועד לחכמים: שישים שנות מדע ודעת" המוצגת בבית האקדמיה | הכניסה חופשית

Visit the exhibition "A Gathering Place of Scholars: 60 Years of Science and Knowledge", now on display at the Israel Academy | Admission is free of charge