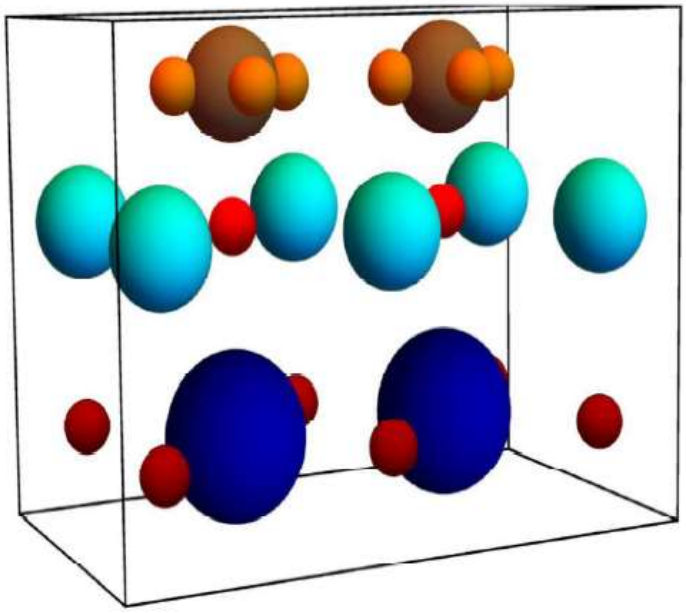
המכללה האקדמית אשקלון
Ashkelon Academic College

AAC's Cooperation with National Taiwan University of Science and Technology (NTU)

1. Multinational cooperation: Taiwan–Israel–China in the field of quantum mechanics 2021–2023:

A universal theory of high T^c superconductivity and anomalous normal properties in a 2D doped metallic layer on a perovskite oxide substrate



In the photo, three adjacent layers of semiconductor crystal are presented $Bi_2Sr_2CaCu_2O_{8+x}$

The cooperation includes joint research and an exchange of faculty members. The research itself is conducted by Prof. Baruch Rosenstein from the department of Electrophysics of the National Yang-Ming Chiao Tung University, Prof. Hsien-Chung Kao from the department of Physics of National Taiwan Normal University, and Dr. Guy Leshem from the department of Computer Sciences of Ashkelon Academic College (AAC).

Dr. Guy Leshem
Department of Computer Sciences
Ashkelon Academic College
Ashkelon, Israel

Prof. Hsien-Chung Kao
Department of Physics
National Taiwan Normal University
Taipei, Taiwan

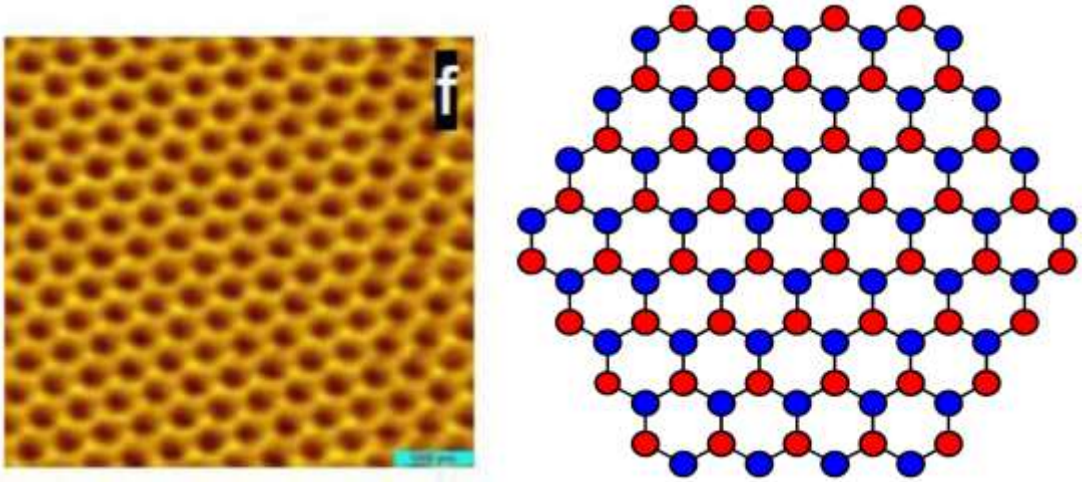
Prof. Baruch Rosenstein
Department of Electrophysics
National Yang Ming Chiao Tung University
Hsinchu, Taiwan

2. Submission of a joint research proposal to the Israeli and Taiwanese Ministries of Science for 2022-2023: ***"Development of a secure Medical records Chain (MrC) system based on block-chain."***

   This research program proposes an established medical record chain (MRC) system based on biometric access control with its block-chain architecture. Partners in the proposal, Chief Researcher from the Taiwanese side: Prof. Kenneth Pao Hsing-Kuo From National Taiwan University of Science & Technology in Taipei, Chief Researcher from the Israeli side: Dr. Guy Leshem from the Department of Computer Science at Ashkelon Academic College in Ashkelon, and Dr. Hadassah Deltoff from the Department of Software Engineering at Shamoon College of Engineering in Ashdod.

3. Multinational cooperation: Taiwan–Israel–China in the field of quantum mechanics 2018–2021:

Covariant Gaussian approximation to the electric and optical response of crystalline materials



The illustration shows an atomic structure of a semiconductor substance called graphene, left and right, a down–folded model defined on the basis of a unit cell, but containing 8 "orbitals."

The cooperation includes joint research and an exchange of faculty members. The research is conducted by Prof. Baruch Rosenstein from the department of Electrophysics of the National Yang–Ming Chiao Tung University, Prof. Li Ding–Ping from the department of Physics of Peking University, and Dr. Guy Leshem from the department of Computer Sciences of Ashkelon Academic College (AAC).

Dr. Guy Leshem
Department of Computer Sciences
Ashkelon Academic College
Ashkelon, Israel

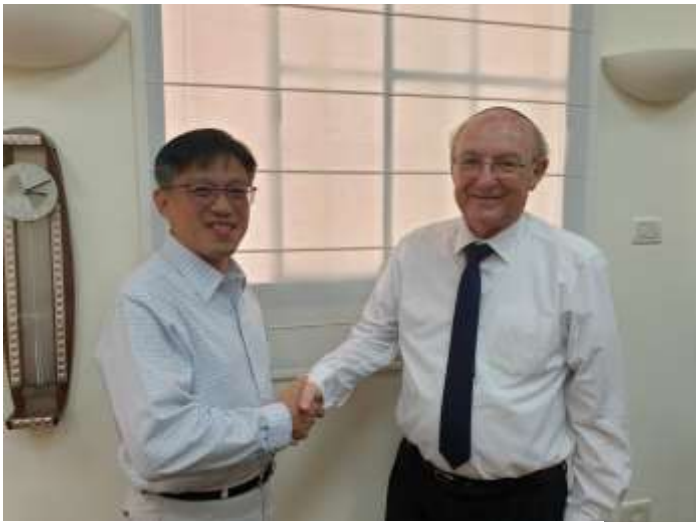
Prof. Li Ding–Ping
Department of Physics
Peking University
Beijing, China

Prof. Baruch Rosenstein
Department of Electrophysics
National Yang Ming Chiao Tung University
Hsinchu, Taiwan

4. Participation in the delegation of the Ministry of Science to Taiwan for a conference in the field of artificial intelligence in 2018. Each researcher gave a lecture in which he presented new areas of research in artificial intelligence that can be worked on in collaboration with researchers from Taiwan. For example, the development of "deep learning" systems for detecting characteristics of computer damage (viruses).

In the photos: lecturers given by Prof. Esther David and Dr. Guy Leshem during the Taiwan–Israel Dual State Conference

5. An organized visit of an official delegation from Taiwan to Israel in cybersecurity, which Dr. Guy Leshem initiated The delegation from Taiwan arrived in Israel to examine future cooperation with academia and industries. The delegation, accompanied by the scientific attaché of the Taiwan Embassy in Israel, met with representatives from Tel Aviv University, Ben Gurion University, Ashkelon Academic College, Check Point company, and the ITC CyberLearning Organization.



6. Student exchange program for conducting research in the IOT Laboratory at NTU University in collaboration with Intel, Taiwan. 2021 marks the fourth year in which a student exchange is taking place between Ashkelon Academic College and NTU University in Taiwan. In the upcoming summer season, four outstanding students from the Department of Computer Science will be participating in a multinational workshop in the field of IOT development at NTU University in Taiwan in collaboration with Intel. In addition to experiential learning and recreational activities with Taiwanese students, this is an opportunity to work on an Intel software project. The

study also collaborates with international Hi–tech companies and focuses on the ″Internet of Things.″