

المعهد العالي  
للعلوم التطبيقية والتكنولوجيا  
Higher Institute for Applied  
Sciences and Technology

# HIAST

For highly qualified engineers

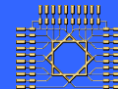
Dr. Maher Suleiman

21th Meeting of COMSATS Coordinating Council  
Almaty, Kazakhstan, 3-4 April 2018

1



## Outlines



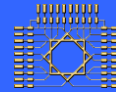
- About HIAST
- Study at HIAST
- Research & Development
- Achievements and awards
- Scientific Collaboration



2



## About HIAST

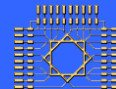


- Established in 1983
- Selecting students with top High School marks.
- Limited number of students.
- Graduating highly qualified engineers in many applied science fields.
- A highly qualified teaching staff.
- Very good teacher/student ratio: ~1/4.

3



## Key Figures

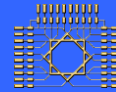


- Staff:
  - 102 Ph.D (36 part-time employees)
  - 111 Engineers (11 part-time employees)
  - 90 Technicians.
  - 92 Administrative staff
- Students:
  - 323 undergraduates
  - 80 postgraduates (43 Master + 37 PhD)

4



# Study at HIAST

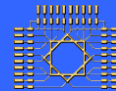


- Accepted students are from two categories:
  - Students financed by public institutions
  - Self-financed students
- Offered degrees:
  - Bachelor Science in Engineering
  - Masters
  - PhDs

5



# Study at HIAST

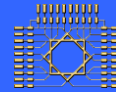


- Specialization
  - Informatics
  - Telecommunication
  - Electronic Systems
  - Mechatronics
  - Materials Science
  - **Aeronautics**

6



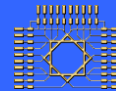
## Training Activity



- In-house training courses to the employees to acquire knowledge and to enhance their professional skills
- Training courses are also provided to external customers (public and private sectors)
- Wide range of subjects: from office application to specialized industrial tools



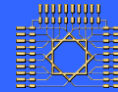
## R&D activities



- Informatics
  - ERP Systems
  - Arabic Language Processing
  - High Performance Computing
  - Information & Decision Support Systems
  - Big Data systems
- Automatic Control:
  - Non Linear, Fuzzy, Robust,
  - Stochastic filtering for Control and Navigation applications
- Robotics
  - Manipulators, Parallel Robots, Mobile Robots
- Power Management
  - Power Factor Correction



## R&D activities

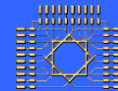


- Telecommunications
  - Radio, Optical and Digital communications
  - Signal processing
  - Communication networks and networking
- Physics
  - Materials Science: Polymers, Magnetic materials, Nano-materials and nano-fibers, Metallurgy
  - Optics and laser
  - Renewable energy
- Environment
  - Chemical pollutants analysis of water and soil
  - Air pollution analysis.
  - Water microbiological analysis.
  - Wastewater treatment stations

9



## Achievements and awards (2017-2018)



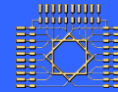
- Graduated students : 60 Eng., 25 Masters, 7 PhDs



10



# Achievements and awards (2017-2018)



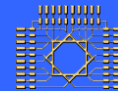
- Publishing 8 Scientific Books (freely available to download from [hiast.edu.sy](http://hiast.edu.sy))



11



# Achievements and awards (2017-2018)




- Publishing 19 papers in international Journals


07-03-2017 | Original Paper | Issue 11/2017

Synthesis and swelling behavior of metal-chelating superabsorbent hydrogels based on sodium alginate-g-poly(AMPS-co-AA-co-AM) obtained under microwave irradiation

Journal: *Polymer Bulletin* > Issue 11/2017  
Authors: Noor Mohammad, Yomen Atassi, M



**MATERIALS CHEMISTRY AND PHYSICS**  
Volume 211, 1 June 2018, Pages 79-87



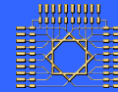
Comparative study of microwave absorption characteristics of (Polyaniline/NiZn ferrite) nanocomposites with different ferrite percentages

Nassim Nasser Ali<sup>a</sup>, Yomen Atassi<sup>a, b, c</sup>, Akil Salloum<sup>a</sup>, Abdulkarim Charba<sup>a</sup>, Adnan Malki<sup>a</sup>, Mojtaba Jafarian<sup>b</sup>

12



## Achievements and awards (2017-2018)

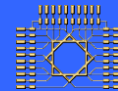


- Developing Software applications for public institutions
  - Ministry of Justice
  - Ministry of Agriculture
  - Ministry of finance
  - Hospitals .
  - Higher institute for Business Administration
- Providing platform for performance analysis of the Solar thermal collectors to the National Energy Research Center

13



## Achievements and awards (2017-2018)



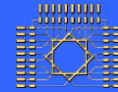
- Gold Medal for the best invention in the Al-Bassel Fair for invention and innovation-Damascus 2017, for the Scorpion Hybrid Robot



14



## Achievements and awards (2017-2018)



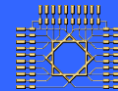
- Wining the 1<sup>st</sup> place in the Syrian World Robot Olympiad (WRO-Syria 2017).



15



## Achievements and awards (2017-2018)



- wining the 4<sup>th</sup> place in the World Robot Olympiad, Costa rica 2018.

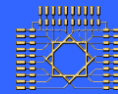


16





## Achievements and awards (2017-2018)



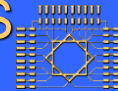
- Wining the 1<sup>st</sup> place in the ACM Syrian Collegiate Programming Contest



17



## Collaboration with COMSATS Network

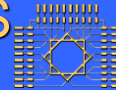


- First contacts has been made to launch collaboration with some centers in COMSATS member countries :
  - IROST-Iran: Solar and fuel cell and hybrid PV systems
  - CERTE- Tunisia: Waste water treatment
  - COMSATS: Tele-health Program
  - Advanced Materials and Nanotechnology Research Center - Iran: microwave absorbing materials
- Seeking Collaboration between RIPCISyria (Research Institute for Pharmaceutical and Chemical Industries) and CBSCR (Center for Bioequivalence Study Drug research)

18



## Collaboration with COMSATS Network

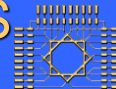


- HIAST is also ready to collaborate with other organizations in the R&D domains of common interests, especially in:
  - nanotechnology (ferrites materials, microwave absorbing materials, Carbon quantum dots, ...)
  - conductive polymers, hydrogels, superabsorbent polymers
  - Renewable energy (Solar and fuel cell, hybrid PV systems, biofuel)

19



## Collaboration with COMSATS Network

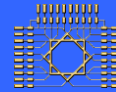


- Collaboration could be :
  - Joint researches or projects ,
  - Sharing expertise,
  - Giving access to research resources (TEM, SEM, AFM, etc ...)
  - Exchange of students/researchers for short periods (1-4 weeks)

20



## In Conclusion



- HIAST is a Center of Excellence for Higher Education and Research & Development in Syria.
- As a multidisciplinary institute, HIAST has a wide range of R&D Activities.
- HIAST is open and keen to all kind of collaboration with COMSATS Network.
- Collaboration could help HIAST to reduce the **Brain Drain effect** caused by the crisis in Syria.

21

Thank You!

22