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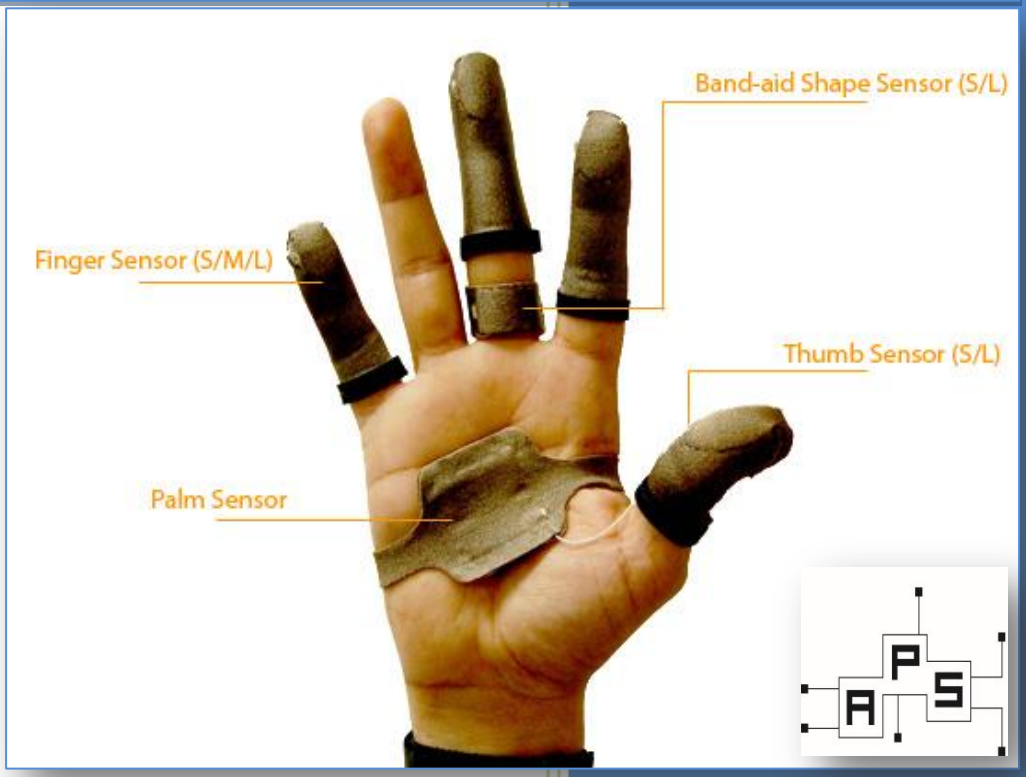
مكتبة الإسكندرية

2010-2011

ALEXploratorium Projects Support (APS)



Bibliotheca Alexandrina

Planetarium Science Center

2010-2011

Planetarium Science Center

The APS 2010-2011 Tournament supported 4 out of 13 teams after two filtration processes and it was the first time to support 4 teams during one academic year and reached successfully the following achievements:

1. **Warehouse Management System using RFID:**
   - **Project Field:** Communication and Electronics
   - **Type of Project:** Hardware & Software
   - **Project Description:** The team used RFID tags and readers for applying full digital control on the warehouse, to control and monitor the in and out operations of different goods using wireless techniques which protect the goods from being stolen by laborers. All the goods are registered in the database which helps the owner to control the quantities of each item.
   - **Team Achievements:** The team produced a full prototype which solves practical problems, and succeeded in having 5 sponsors to support their project; the BA was one of them. They also won first place at the Siemens Competition for Industry Automation and Drive Technologies.
   - **Grade:** Excellent
   - **Contact Person:** Ali Ahmed Wahba (Ali.wahba@ymail.com)

2. **Horizontal Axis Wind Turbine (HAWT 2011):**
   - **Project Field:** Mechanical Engineering, Renewable Energy
   - **Type of Project:** Hardware & Software
   - **Project Description:** The project is to increase the efficiency of a 1.5 MW wind turbine by enhancing the wind turbine blade design using a sensitive pitch and yaw control system. Thus, we can avoid more carbon emissions by the same unit. Another perspective is the environmental impact of wind energy. The wind energy is, however, a green energy; it also has a bad impact on the environment, namely noise emissions. In our project, we are working on this point by decreasing the noise emissions from the wind turbine by developing the blade design using computational aero-acoustics.
   - **Team Achievements:** The team succeeded to produce a prototype of the modified wind turbine after a field study of Gabal Elzeit in Red Sea Government, Egypt. They also published a scientific Paper about their project in the (**TIREC 2011)** Conference in Turkey.
   - **Grade:** Excellent
   - **Contact Person:** Ahmed Mostafa Taher (Tahera2@asme.org)

3. **Plasma Sputtering Process**
    - **Project Field:** Material Science
    - **Type of Project:** Hardware
    - **Project Description:** The project aims to assemble a plasma magnetron sputtering device which may be used in different applications. The application is the sputtering of a superconductor material (Bismuth) and its subsequent deposition to form a thin film on copper wires.
    - **Team Achievements:** The team succeeded to produce a prototype of the vacuum chamber required for sputtering process. The results of their experiments proved that by using their device, the produced superconductor has a higher quality than the one which already exists in the market. They are currently preparing a paper about their achievement.
    - **Grade:** Excellent
    - **Contact Person:** Ahmed Mohammed Abdel Hameed (Asmm201122@yahoo.com)

4. **Open BTS:**
    - **Project Field:** Communications (Software-defined Radio)
    - **Type of Project:** Hardware & Software
    - **Project Description:** OpenBTS (Open Base Transceiver Station) is a software-based GSM access point, allowing standard GSM-compatible mobile phones to make telephone calls without using existing telecommunication providers' networks. OpenBTS is considered a new kind of cellular network that can be installed and operated at about 1/10 the cost of current technologies, but that will still be compatible with most of the mobile phone handsets that are already in the market. This technology can also be used in private network applications at much lower cost and complexity than conventional cellular. The project was founded by David Burgess & Harvind Samra with the aim of reducing the cost of GSM service in rural world and the developing world to below $1 per month, per subscriber.
    - Our aim is to contribute to the development of OpenBTS by fixing some of the current software bugs and/or adding support to more GSM features.
    - **Team Achievements:** The team succeeded to produce a prototype of OpenBTS System and they had some offers from ALCATEL Egypt & Mobinil which would like to execute this project inside their companies.
    - **Grade:** Excellent
    - **Contact Person:** Ahmed Saieed Khalil (a.saieed@ieee.org)