

AIMS TO BE ACHIEVED DURING THE TERM and RESEARCH AGENDA

I have managed some military and interdisciplinary projects like unmanned aerial vehicles, frequency hopping telecommunication systems, etc. So I can continue similar projects in collaboration with the university and in addition, I can improve:

- Alternative energy research like wind and tidal energy resources, feasibility and storage possibilities in your country.
- and Solar Cells Efficiency Improvements: Using Au and Ag nanoparticles on the top of amorphous Silicon thin films by benefiting surface Plasmon resonators. Measuring different oxide layer thicknesses to isolate nanoparticles from the active surface to enhance the efficiency.
- Laser and optic related topics such as optical modulation quality measurement of Kerr and Pockell cell modulators, optical properties of birefringent and dichroic crystals, inspection, evaluation and improvement of optical transmission in fiber optic cables like trying different dopants and coatings,
- More efficient solar cell manufacturing methods by optimizing the surface geometry, by trying new energy storage techniques like using embedded MOSFETs.
- Solid state IC design and implementation and related projects like crystallization, etching, purifying, doping the semiconductor materials, evaluating and measuring Fermi levels of compound materials, measuring band gaps, etc,
- Inspecting the harmful effects of lasers in every kind on material surfaces, radiation damages on semiconductors and on human eye,
- Lots of electrical devices and networks design and implementation such as robots, photonic devices, sensors, remote sensing devices like metal or soil layer detectors,
- PIC and microcomputer based circuit design, assembly and machine language programming of Motorola 6809, Intel 8086, Microchip PICs or higher scale microprocessors. (I can easily write the assembler or machine language programs),
- In fact, the span of my research is highly dependent upon the facilities and the present working groups. It would be great to create some interesting projects in well equipped labs.

The outline of the action plan may be sorted like:

- To explore the lab and research facilities of the university, and the collaboration possibility with the other institutions and the government in order to see the whole picture.
- To teach the students the courses like assembly and machine language as well as digital circuit design and realization to identify the student profiles and needs.
- To set up or renovate the present lab facilities depending on the need and capability.
- To contribute the curriculum and contents of the courses.
- To search the collaboration with the government in related technical projects and to provide long term contracts.

Yours Sincerely,

Dr. Abdülkadir ÖZCAN

akadirozcan@mynet.com