COLLEGE OF ENGINEERING & TECHNOLOGY

Department: Electronics and Communications Engineering, Cairo

Graduation Project Description Form

Project Title: Implanted antennas for breast cancer diagnosis

Duration from mo/year_____till mo/year _____
Project Supervisor(s): Prof. Dr. Abdelmegid Allam

Product Category
Algorithm____ Hardware____ Software_____
Standards:
Safety: UL, CE_____ IEEE _____FCC _____Other _____
Practical Realization Form
PCB _____ Firmware___ Embedded CPU Kit (ARM, ..etc):_____
PC Software _____ Ready-made Package_____ DSP Kit____ FPGA Kit__
VLSI Schematics ____ VLSI Layout _____ VLSI Silicon (ASIC)_____
Language
VHDL/Verilog_____ Matlab _____ C/C++/Java _____
Productization
Finished Product Form:_____ Possible Commercialization _____
Amount of funds needed for buying components: _____
IEEE GOLD Made-In-Egypt/Engineering Day: ___
ITAC (ITIDA) or NTRA Funding Application:_____
Testing
Functional___ Simulation____ Parameters___ Final Hardware_____Other:
Lab Test Setup
EMC _____ Environmental Microwave _____ Analog Lab_ Other:
CAD Tools *(No unauthentic software is allowed):*
Elective Classes Required:

COLLEGE OF ENGINEERING & TECHNOLOGY

Department: Electronics and Communications Engineering, Cairo

Graduation Project Description Form

Abstract

Project contents:

Objective: ***understanding of implanted antennas. Design, analysis, fabrication and measurements of a novel work to be published in journal and conferences. Publish an article in IEEE conference and attending the conference in USA or Europe to defend your novel work. To fulfill these tasks the work includes the following:***

Why implantation

What is an implanted antenna?

Type of implanted antennas

Challenges facing implanted antennas: position, material, size, power supply, processing time, biological compatibility …..

Biological phantoms of human body for invasive testing and measurement

Preparation and constitutions of the breast phantom

Design andsimulation of an antenna using HFSS or CST suitable for breast implantation

Antenna fabrication

Measurement of some antenna parameters in free space

Measurement of some antenna parameters in biological human phantom

Measurement of some antenna parameters inside a rat or rabbit if needed

Comparison between the simulation and measured results

NOTE: the software used are CST or HFSS and MTALAB

Graduation Project Description Form

References and Links