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Journal Name:	British Journal of Applied Science & Technology
Manuscript Number:	Ms_BJAST_33867
Title of the Manuscript:	Wireless Charging System for an Implanted Sensor
Type of the Article	Original research paper

General guideline for Peer Review process:

This journal's peer review policy states that **NO** manuscript should be rejected only on the basis of '**lack of Novelty**', provided the manuscript is scientifically robust and technically sound.

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PART 1: Review Comments

	Reviewer's comment	Author's comment (if agreed with reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)
<u>Compulsory</u> REVISION comments	The paper represents a patent. The idea of the device is not original and was applied in many researches. In order to be accepted as an original research, the author should submit an approach to prove the results of his experiment. This can be done theoretically and mathematically by considering the equations of the energy transfer and conservation in such system and the natures of the transferred and converted energies. 1. Covic G.A. and Boys J.T. "Inductive power transfer", Proceedings of the IEEE, 101 no. 6, 2013, pp. 1276-1289 2. Hui, S.R. "Planar Wireless Charging Technology for Portable Electronic Products and Qi" Proceedings of the IEEE, 101 no. 6, 2013, pp. 1290-1301 3. Garnica J., Chinga R.A. and Lin J. "Wireless Power Transmission: from far field to near field" Proceedings of the IEEE, 101 no. 6, 2013, pp. 1321-1331 4. Ho j. Kim S. and Poon A.S.Y. "Midfield wireless powering for implantable devices" Proceedings of the IEEE, 101 no. 6, 2013, pp. 1369-1378 5. Popovic Z. et al. "Low Power far-field wireless powering for wireless sensors", Proceedings of the IEEE, 101 no. 6, 2013, pp. 1397-1401 6. Hui, S.Y.R. ; Wenxing Z.; Lee, C.K. "A Critical Review of Recent Progress in Mid-Range Wireless Power Transfer" IEEE Trans. Power Electronics, 29 no , 2014, pp 4500 – 4511 The goal of this study is to design, implement and test a wireless charger for low power devices via inductive coupling. After analyzing the whole system step by step for optimization, a system was designed and implemented. Experimental results showed that significant improvements in terms of power-transfer efficiency have been achieved. Measured results are in good agreement with the theoretical	



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	models. It was described and demonstrated that inductive coupling can be used to deliver power wirelessly from a source coil to a load coil and charge a low power device (battery of cell phone, laptop computers and other portable electronics and being capable of charging themselves without ever being plugged in. This mechanism is a potentially robust means for the future low power devices it could developed to reduce our society's dependence on batteries, which are currently heavy and expensive. The main disadvantages of inductive charging are its lower efficiency for far distances and increased resistive heating in comparison to direct contact. Implementations using lower frequencies or older drive technologies charge more slowly and generate heat within most portable electronics and slower charging - due to the lower efficiency. In this application the efficiency exceeding 85% have been realized. This paper introduces a system to transfer the power wirelessly by using the inductive coupling. The produced system has two devices: an external device (transmitter) and an implantable device (receiver). The receiver harvests the power to charge an implanted battery with a regulated voltage. This battery is included to supply the implanted sensor that measures the glucose level in the human body and the Microcontroller that is added to control the sensor.	
<u>Minor</u> REVISION comments		
<u>Optional/General</u> comments		

Reviewer Details:

Name:	Salama Abdelhady
Department, University & Country	Renewable Energy Department, Faculty of Energy Engineering, Aswan University, Egypt