

CELEBRATING
COMMERCIALISATION
YEAR 2014

iiindex 2014

AN INTERNATIONAL EXPOSITION ON RESEARCH AND INNOVATION

invention
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exposition 2014

INNOVATEUR
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2014

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DEWAN AGUNG TUANKU CANSELOR (DATC)
UNIVERSITI TEKNOLOGI MARA
MALAYSIA

*Bridging
the valley of death :
advancing the
commercialisation
of research*

RESEARCH BOOK

iiindex2014

AN INTERNATIONAL EXPOSITION ON RESEARCH AND INNOVATION

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FOREWORD

The Honourable Minister of Science, Technology and Innovation (MOSTI) has launched 2014 as Malaysia Commercialisation Year 2014 (MCY2014) with the theme Science Technology and Innovation (STI) for Wealth Creation. In line with this theme, Invention, Innovation, Design & Exposition 2014 (iidex2014) is an annual exposition organized by UiTM and is the ultimate platform to highlight and commercialise new inventions and innovations. Researchers and inventors will exhibit their products which cater to the needs and wants of the community and the country.

The iidex2014 creates a new dimension by fusing two competitive concepts, a competition among innovative products and a competition to invite Innovateur Wannabes to perform live pitching of their products to the audience. The iidex2014 focuses on comprehensive commercialization and creating opportunities for entrepreneurs to carry out R&D as well as to provide avenue to commercialise their products. Through expositions such as iidex2014, MOSTI hopes to inculcate the culture of commercialisation of new technology designed and created by Malaysians.

I wish to congratulate all the participants of the iidex2014 and this is the opportunity for all researchers to show their ideas and exhibits their products and creativity. Apart from showcasing their products, innovators will have the opportunity to provide a window to the industry for business matching during the exposition.

Tan Sri Dato' Sri Sallehuddin Mohamed
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USERS' IN-VIVO: REFERENCE TABLE ON EFFECTS OF ULTRASOUND DURING PREGNANCY

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Prenatal Ultrasound (US) is commonly used as a routine procedure on pregnant women. It is generally perceived as a safe procedure due to the use of non-ionising radiation. However, its interaction with biological tissue could cause adverse effects. Thermal effect resulting from ultrasound energy absorption could interfere in the cellular function of human body. Unnecessary ultrasound exposure may lead to escalation of intrauterine temperature that may interrupt with the foetal rapid cell growth and proliferation. As a result, significant damage to the developing foetus and birth defects may occur. This study was aimed to investigate the changes on few parameters of rabbits (in-vivo study) caused by prenatal ultrasound exposure. This research involved experimental model using pregnant New Zealand White Rabbit (*Oryctolagus cuniculus*) and exposing them to US exposures at different duration and gestational stages which, based on the interest. The fundamental features in this research are the animals and the ultrasound system. The selection of animals was based on its suitability to fit in the research plan in terms of cost and availability, consultation, generalization of the results, housing availability, husbandry expertise, natural vs. experimental study, the numbers needed, life span and age, size of animals etc. While the selection of ultrasound system was justified based on its technology specification that currently were applied in obstetrics and gynaecology department. Approval from the faculty was obtained on Jun 12, 2012 while research proposal was accepted with minor amendment from Faculty of Health Sciences on Feb 20, 2012. New Zealand White Rabbits (NZWR) which its scientific name was *Oryctolagus cuniculus*, is the animal model throughout the study. NZWR was selected based on its class where it was from the same class as human; mammals. The rabbit was chosen due to their medium size, which made them easy to handle and easy to keep besides that their docile nature make these rabbits, particularly easy to maintain, handle and restrain. Their un-pigmented ears which may facilitate repeated venous injections and bleeding. There were so many types of rabbits such as Angora, Lion Head, Holland Lop, French Lop, Jersey Wobley and Hotot. NZWR was chosen because there are more fertile and prolific, besides this type of rabbit promised us a bigger litter size and higher live birth rate, which are important characteristics in order for the research well being and accomplishment. NZWR were obtained from One Stop Rabbit Farm & Trading, which located in Bukit Badong, Ijok in Selangor. The farm was the closest rabbit farm from the laboratory in terms of delivery of services, advice, documentation and any emergence cases such as sickness and fatality. The order will be made at least two weeks prior to the delivery date so that the breeder can pick and quarantine the rabbits and thus the maximum care will take place in order to assure their health and general condition is good. During the quarantine session, any flaws will be taken care of, such as ringworm and diarrhoea. After the quarantine session end, they are delivered to their new home, which is an animal laboratory located in Faculty of Health Sciences, UiTM Puncak Alam. Based on the research, we found significant differences in the statistic value between the control and treated group.