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Study of the effect of Malaysia commercialized brands coffee on
heart rate and blood pressure / Ong Sang Chee.

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PERPUSTAKAAN SULTANAH NUR ZAHIRAH UMT

**STUDY OF THE EFFECT OF MALAYSIA COMMERCIALIZED BRANDS
COFFEE ON HEART RATE AND BLOOD PRESSURE**

**By
ONG SANG CHEE**

**A thesis submitted in partial fulfillment of
the requirement for the award of the degree of
Bachelor of Applied Science
(Physics Electronics and Instrumentation)**

**DEPARTMENT OF PHYSICAL SCIENCES
FACULTY OF SCIENCE AND TECHNOLOGY
UNIVERSITI MALAYSIA TERENGGANU
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JABATAN SAINS FIZIK
FAKULTI SAINS DAN TEKNOLOGI
UNIVERSITI MALAYSIA TERENGGANU

PENGAKUAN DAN PENGESAHAN LAPORAN PENYELIDIKAN SFZ 4399 A/B

Adalah ini diakui dan disahkan bahawa laporan penyelidikan bertajuk: **Study of the Effect of Malaysia Commercialized Brands Coffee on Heart Rate and Blood Pressure** oleh **Ong Sang Chee**, no. Matrik **UK12988** telah diperiksa dan semua pembetulan yang disarankan telah dilakukan. Laporan ini dikemukakan kepada Jabatan Sains Fizik sebagai memenuhi sebahagian daripada keperluan memperoleh Ijazah Sarjana Muda Sains Gunaan (Fizik Elektronik & Instrumentasi), Fakulti Sains dan Teknologi, UMT.

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DECLARATION

I hereby declare that this thesis entitled Study of the Effect of Malaysia Commercialized Brands Coffee on Heart Rate and Blood Pressure is the result of my own research except as cited in the references.

Signature

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: 29th April 2009

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STUDY OF THE EFFECT OF MALAYSIA COMMERCIALIZED BRANDS COFFEE ON HEART RATE AND BLOOD PRESSURE

ABSTRACT

Coffee is a common drink for almost all the people in the world and it is same to Malaysian. Malaysian mostly drinks the instant standard coffee which is easy to obtain from the market and shop. This is a study that focuses on the Malaysian commercialized brands instant coffee and study the effect of the coffee the human health. The study has shown that the commercialized brand of Malaysian instant coffee affects the cardiovascular system primarily through the active ingredient caffeine in the coffee powder of the instant coffee. The urine sample of the participant that consumed the coffee was tested by the Fourier Transform Infrared Spectrometer (FT-IR) to identify the chemical group inside the urine after consumed coffee. The study of the Ultra-Violet/Visible spectrometer (UV-VIS) was done the urine sample of participant after consumed the coffee. The results of the FT-IR shown that the urine sample of the participant after drinking coffee is a healthy urine or normal urine and that is no coffee chemical group can be found by using the FT-IR. As for the UV-VIS result, the spectrum of the urine is different from each other and it is due to the variables of the urine sample of each of the participant after the consumption of the coffee. This study proved that the different of the urine sample of different human showing the different of the adsorption of the UV-VIS. In conclusion, the Malaysian commercialized brand instant coffee shows the short terms effect on the cardiovascular system on the health of the Malaysian and the effect is varied due to the individual who consume the coffee. More implementation of the research design is needed so that the future research of the commercialized brand of coffee can be carried out successfully and the results that obtained can be differentiated.

KAJIAN MENGENAI KESAN KOPI KOMERSIAL MALAYSIA TERHADAP KADAR DEGUPAN JANTUNG DAN TEKANAN DARAH

ABSTRAK

Kopi merupakan satu minuman yang biasa bagi orang ramai di dunia dan juga rakyat Malaysia. Kebanyakan Rakyat Malaysia meminum kopi segera yang mudah diperolehi dari pasar dan kedai. Kajian ini menumpu pada kopi segera yang berjenama komersial Malaysia dan mengkaji kesan kopi terhadap kesihatan manusia. Kajian ini telah membuktikan bahawa kopi segera yang berjenama komersial Malaysia melibatkan kesan terhadap sistem kardiovaskular terutamanya melalui kafein iaitu bahan aktif dalam serbuk kopi yang ada didalam kopi segera. Sampel air kencing yang dikumpul telah diuji dengan menggunakan Fourier Transform Infrared Spectrometer (FT-IR) untuk mengenal pasti kumpulan kimia air kencing selepas meminum kopi. Kajian spektrometer Ultra Violet / Visible (UV-VIS) telah dijalankan untuk mengkaji sampel air kencing peminum selepas meminum kopi. Keputusan-keputusan bagi FT-IR membuktikan bahawa sampel air kencing itu bagi peminum setelah meminum kopi adalah air kencing sihat atau air kencing normal dan juga tidak ada kumpulan kopi kimia (kafein) dapat dijumpai dengan menggunakan FT-IR. Bagi hasil UV VIS, spektrum air kencing adalah berbeza antara sama satu lain. Ini adalah disebabkan oleh pembolehubah yang ada pada sampel air kencing bagi setiap peminum kajian ini selepas minum kopi dan ini telah membuktikan bahawa sampel air kencing pada setiap manusia adalah berbeza dari segi penyerapan UV-VIS. Sebagai kesimpulannya, kopi segera yang berjenama komersial Malaysia menunjukkan kesan tempoh singkat terhadap kesihatan manusia iaitu sistem kardiovaskular bagi rakyat Malaysia dan kesan tersebut akan berubah mengikut individu yang meminum kopi. Lebih banyak pelaksanaan bagi bentuk penyelidikan adalah diperlukan supaya penyelidikan masa depan yang berasas kopi komersial Malaysia boleh dijalankan dengan berjaya dan keputusan yang diperolehi dapat dibezakan.