



Department : Forensic Science		
Academic Year : 2020-21		
Sr. No.	Programme Code	Name of the Programme
01.	329	M.Sc. Forensic Science

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(A Central University established by Central University Act 2009 No. 25 of 2009)

A REVIEW
ON
Application of Carbon dots in Fingerprints and Questioned
Document

Submitted for
Partial fulfilment of the degree of
M.Sc. in Forensic Science

By
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M.Sc. Forensic Science
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Under the Supervision of
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Assistant Professor
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Certificate

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It represents entirely an independent work from the part of the candidates.

Date: 11/10/2021

Place: Bilaspur (C.G.)

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Dr. Sudhir Yadav

Associate Professor & Head
Department of Forensic Science
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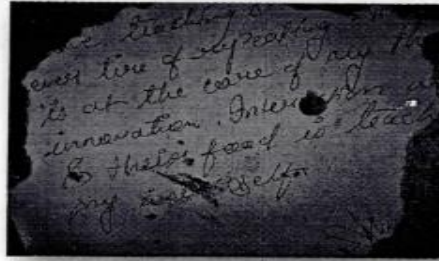
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A REVIEW ON
Charred Document in Forensic Science



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the degree of M.Sc. Hons in Forensic Science
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This is to certify that Priyanka Tigga student of M.Sc. Hon's (Forensic Science) IVth semester has written the review paper entitled "charred document in forensic science" under the supervision of Ms. Blessi Uikey for the fulfilment of the Hon's degree of Masters of Science in Forensic Science.

It represents entirely an independent work from the part of the candidates.

Supervisor

Blessi Uikey
27/10/2021

Ms. Blessi Uikey

Assistant Professor

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Head

Dr. Sudhir Yadav

Dr. Sudhir Yadav

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Head, C.G.

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Date: 27/10/2021

Place: Bilaspur

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Charred Documents in Forensic Science

Department of Forensic Science

Guru Ghasidas Central University, Bilaspur Chhattisgarh, India 495001

Abstract:

The charred document or burnt document are commonly found evidence in arson and fire cases, as the documents can be intentionally or accidentally exposed to fire, which destroys the contents of the documents. In many criminal cases, the documents are intentionally burnt so that the criminal may hide the evidence of his/her crime. The charred documents are extremely fragile and need a lot of care in their handling, transportation, and examination. Even small wind pressure can temper or destroy this extremely important piece of evidence. Thus the examination and the decipherment of the original content of these type of documents is very challenging and require many different types of techniques and procedures. Though not many types of research have been conducted in this field, yet there are many defined procedures and techniques which are used in the decipherment of charred documents. This review report emphasizes the preservation and handling of charred documents and the methods available for their analysis and examination as well as an examination of different inks in charred documents. Both advanced and common methodologies used for the charred document examination are reported in this review report, such as Infra-Red techniques, Cyanoacrylate fuming, UV techniques, etc.

Keywords: Charred Documents, UV, IR, Cyanoacrylate

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REVIEW REPORT ON
AN OVERVIEW OF E-NOSE AND ITS FORENSIC SIGNIFICANCE



Submitted in
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Under the Supervision of
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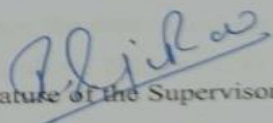


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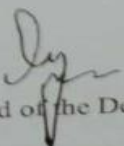
This is to certify that **Miss. Isha Sanyal** student of M.Sc. (Forensic Science) IVth semester has worked on a review report entitled "**An Overview of E-Nose and Its Forensic Significance**" under the supervision of **Dr. I. Arjun Rao** for the partial fulfilment for the degree of Master of Science in Forensic Science.

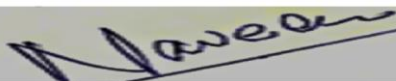
It represents entirely independent work from the part of the candidates.


Signature of the Supervisor

Date:

Place: Bilaspur


Head of the Department



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Abstract:

The use of electronic-nose (E-nose) innovations in measurable science is a new advancement following a long history of progress in the improvement of assorted applications in the connected biomedical and drug fields. Information from measurable investigations should achieve the necessities and prerequisites of both the logical and legitimate networks. The sort of information gathered from electronic-nose gadgets gives a method for distinguishing explicit kinds of data about the substance idea of evidentiary articles and sample being scrutinized utilizing signature profiles of complex gaseous mixture containing volatile compounds, delivered from various items and parts of the human body. E-nose examinations additionally give valuable subjective data about the physicochemical attributes and metabolic states of human subjects without the requirement for tedious investigations to distinguish all substance segments in human-derived volatile compounds. E-nose gadgets are equipped for giving data to a wide scope of measurable applications, valuable for addressing numerous sorts of inquiries identifying with previous occasions and subtleties of conditions and conditions that prompted crimes including human subjects and the culprits in question. E-nose gadgets have been utilized to help find live subjects, covered in the rubble of imploded structures following catastrophic events, just as covered up bodies and the human remaining parts of survivors of mishaps and wrongdoings of hostility. The non-invasive investigation of volatile mixtures in the human breath and lungs of living and expired people gives a way to recognizing the presence of illnesses or unfavourable physiological states of human subjects (both before and after death) possibly helpful in deciding the cause of death, time of death and relevant elements adding to deadly events like homicide and other rough wrongdoings.

Keywords: Bio-Markers, E-Nose, Sensors.

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**Project Report
On**

“Y – Chromosomal STR” - Review



By
HARSHITA RAJPUT

ROLL NO.: 19405506
REGISTRATION NO.: Ggv/19/3012

Under the supervision
of

Dr. Chanchal Kumar
Assistant professor
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Report submitted in partial fulfilment for the Degree of
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June 2020-21

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This is to certify that **Harshita Rajput** carried out the review paper under my supervision in the Department of Forensic Science, Guru Ghasidas Vishwavidyalaya, Bilaspur C.G. on the topic "**Y – Chromosomal STR**" To the best of our knowledge.

Supervisor

(Dr. Chanchal Kumar)

Assistant Professor

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1. Abstract

The examination of STR markers situated on the y chromosome is a set up on strategy in legal case work investigation y STR examination can distinguish the presence of little measure of male DNA of one or various doners Generally this technique is applied if there should arise an occurrence of male on female rape. The y chromosome is one of the littlest human chromosome with a normal size of 60 million base sets. We have utilize hereditary markers in distinguish testing this incorporate single nucleotide testing this incorporate single nucleotide polymorphism and miniature satellite STR markers appropriate for measurable investigation on both the Autosomal non-sex. STR markers use for recognizable proof purposes has zeroed in on markers on the Autosomal chromosomes and the y chromosomal STRcomposing the premise of y STR DNA profiling which is passed down to all the male youngster from the dad practically unblemished STR composing examination utilizing profiler in addition to and mentype pack. The standard board of Autosomal loci utilized in legal hereditary qualities y chromosome heplotyping, the translation of result, databasing exertion and populace hereditary qualities perspectives criminological utilization of y STR are nonrecombinig in nature and it's application is restricted later on as more and challenges casesappears

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A REVIEW
ON

**“Prevalence and effects of Sickle Cell Anemia (SCD) in
Chhattisgarh. Disease, Diagnosis and Treatment”**

Submitted for
Partial fulfilment of degree of
M.Sc. in Forensic Science

Submitted By
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FORWARDING CERTIFICATE

This is to certify that **Mr. Praveen Kumar** has carried out the Review paper on the topic “**Prevalence and effects of Sickle Cell Anemia (SCD) in Chhattisgarh. Disease, Diagnosis and Treatment**” This written Review paper is submitted for the partial fulfilment of requirement for the degree of **M.Sc. Forensic Science** and for examiner's evaluations. I wish him success in his life.

(Dr. Sudhir Yadav)

Head of the Department
Department of Forensic Science
Guru Ghasidas Vishwavidyalaya
Koni, Bilaspur 495009, India

Head, (SHE)

Department of Forensic Science
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Place: Bilaspur (C.G.)

Date : 25/10/2021

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Content of the Review Paper

- Introduction
- SCD in Tribal Population of India
- Prevalence of Sickle Cell Anemia (SCD) in Chhattisgarh
- Sickle Cell Disease and Pathophysiology
 - patient's symptoms
 - Inheritance
 - Pathophysiology
 - Sickle cell trait
- Hemoglobinopathies
- Diagnosis of sickle cell disease in the laboratory
 - Structure and forms of haemoglobin
 - Sickle Haemoglobin or Hemoglobin S
 - Sickling Test
 - Method of Disease testing and Preparation of Reagents
 - Molecular diagnosis of sickle cell anemia
 - DNA sequencing
- Clinical Treatment and Manifestation of Sickle Cell Anemia (SCD)
 - General Health Management
 - Fever
 - Hand-Foot Syndrome
 - Pain
 - Lung Disease
 - Pregnancy and Contraception
- SCD frequency in population
- Sickle Cell Disorder Screening of Chhattisgarh State
- Discussion
- Conclusion
- Abstract
- References

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“Forensic Facial Reconstruction”

**M.Sc Dissertation submitted to Guru Ghasidas Vishwavidyalaya, Bilaspur
In partial fulfillment of the requirement of the degree**

Master of Science in Forensic Science

By

Harshil Singh Rajput

(Enrollment No.)

GGV/16/3128

Under the guidance of

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Assistant Professor

Department of Forensic Science

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Bilaspur (C.G) - 495009



Guru Ghasidas Vishwavidyalaya

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2021

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Department of Forensic Science
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CERTIFICATE

This is to certify that the review paper entitled "**Forensic Facial Reconstruction**" submitted by **Miss Harshil Singh Rajput** to Department of Forensic Science, Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.) for the award of M.Sc. Degree in Forensic Science is the review work done by her under my able guidance. I further certify that the work is on review based and the dissertation or part there of has not formed the basis for the award of any other Degree or Diploma.

Supervisor

Dr. I Arjun Rao

Asst. Professor

Department of Forensic Science
GGV, Bilaspur (C.G.)

Place: Bilaspur (C.G.)

Date: 11/10/2021

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Forensic Facial Reconstruction:

Abstract:

Forensic Facial Reconstruction refers to any process that aims to recover the morphology of a face at the moment before death, from the observation of a skull. Facial reconstruction is used for many years to identify skeletal remains. It is also used in the image identification of criminals and victims for post-mortem identification purposes. Facial reconstruction is a way to present visual information about an unknown individual. There are several techniques of doing facial reconstruction which vary from two dimensional drawings to three dimensional clay models. With the advancement in 3D technology, efficient, rapid and effective computerized 3D forensic facial reconstruction method has been developed which has brought down the errors.

Introduction:

The term 'facial reconstruction' refers to the reconstruction of an image of a face from a recovered skull. The identification of human remains represents a major challenge in forensic science. Several techniques now exist, and it has become common for facial reconstruction which is used as evidence in court when the identity of a deceased person is in question. Facial reconstruction was compared to the photographs of the missing person by video superimposition (1). Forensic facial reconstruction is a combination of both scientific methods and artistic skill. It can be used to reconstruct the soft tissues on to the skull in order to obtain the image of an individual (2-4). Some reviewers considered that forensic facial reconstruction is a method of facial approximation, i.e. various facial patterns can be established from the same skull. Other researchers on the other hand felt that each skull can only produce one face and this would hence lead to positive identification of an individual, they used the term "Facial Reconstruction" (5). Forensic facial reconstruction is used in both forensic science and Archaeology. In forensic science, this method is used in the identification of an individual where the conventional/usual methods of identification are unsuccessful. In Archaeology, it is used to identify the faces of the people from the past, bone remains, embalmed bodies, etc (6).

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PROJECT REPORT

On

identification of urine using the DMAC test



By

SUDIP KUMAR CHANDRA

ROLL NO.: 19405525
REGISTRATION NO.: GGV/19/3400

Under the supervision

of

Dr. AJAY AMIT
ASSISTANT PROFESSOR
Department of Forensic Science

Report submitted in partial fulfilment for the Degree of
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June, 2021

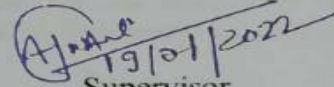
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Bilaspur (C.G.) 495009, India

CERTIFICATE

This is to certify that **SUDIP KUMAR CHANDRA** carried out the project under my supervision in the Department of Forensic Science, GuruGhasidas Vishwavidyalaya, Bilaspur C.G. on the topic "**IDENTIFICATION OF URINE USING THE DMAC TEST**". To the best of our knowledge the work presented in this project is original and has not been submitted anywhere.


19/01/2022
Supervisor

(Dr. AJAY AMIT)
Assistant Professor
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CONTENT:

- INTRODUCTION
- MATERIAL AND METHODS
- TYPES OF URINE TEST
 - PRESUMPTIVE
 - CONFIRMATORY
- REACTIVITY AND SENSITIVITY TEST FOR URINE
- CURRENT TECHNIQUE
- EMERGING TECHNIQUE
- CONCLUSION
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INTRODUCTION

FORENSIC BIOLOGY is the analysis of body fluids, stain and other materials to help solve a crime. Typically, this involves the positive identification of blood, semen or saliva and further testing (DNA) to determine who the material may have originated from, typically the

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“Hair as a Biological Indicator of Drug Use/Abuse”

**M.Sc. Review Paper submitted to Guru Ghasidas Vishwavidyalaya, Bilaspur
in Partial fulfillment of the requirement for the degree of**

Masters

In

Forensic Science

BY

Aarti Sahu

(En.no. GGV/16/3091 Roll No.19405501)

Under the Guidance of

Dr I. Arjun Rao

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2021

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Hair as a Biological Indicator of Drug Use/Abuse

ABSTRACT

Hair analysis can reveal information about a person's drug addiction history or drug toxicity. A lot of work done in the last few decades has been discussed in this article, keeping in mind certain essential applications of hair analysis. Hair provides a greater window for drug detection when compared to other biological samples. Following administration, drugs are deposited in hair by several methods including blood circulation. When compared to other biological samples such as saliva, blood, and urine, the deposited drug is significantly more stable and can be detected for a longer length of time. Furthermore, utilizing sensitive analytical techniques, segmental analysis can portray multiple or single drug administration. This article examines the methodological and practical challenges surrounding the use of hair as a biological indication of drug use/abuse or chronic exposure to toxicants in the environment. The preparation and extraction processes, as well as the analytical methodologies for hair samples, are discussed in this article. The structure of hair is explored, as well as the ways through which drugs are incorporated into it.

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Review Report

On

**“A REVIEW ON - MARKERS AND THEIR TECHNIQUE
USED FOR MENSTRUAL BLOOD IDENTIFICATION
AND ITS IMPORTANCE IN FORENSIC ASPECT”**



By

KALYANI DEWANGAN

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Under the supervision

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ASSISTANT PROFESSOR

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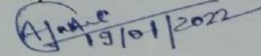


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A REVIEW ON - MARKERS AND THEIR TECHNIQUE USED FOR MENSTRUAL BLOOD IDENTIFICATION AND ITS IMPORTANCE IN FORENSIC ASPECT

ABSTRACT

Body fluid identification is an important aspect of forensic work, as it can help identify a suspect and provide information about the kind of criminal activity that took place. Blood is one of the most commonly found body fluids at a crime scene. While visually it is easily distinguishable from other fluids, an accurate method is needed to differentiate between peripheral blood and menstrual blood. This differentiation could provide critical evidence regarding consent in an alleged sexual assault. Menstruation is the shedding of the internal lining of the uterus that occurs on a monthly basis in women of a reproductive age group. Menstrual blood is different in composition from the peripheral blood flowing through arteries and veins. It consists of a mixture of vaginal and cervical secretions, epithelial cells, and debris from the endometrial lining, blood and fibrinolytic products. The fibrinolytic products are associated with the prevention of blood clot formation. Several methods have been researched and used for the detection of menstrual blood. These include microscopy, identification of the lactate dehydrogenase isozyme, detection of fibrinolytic products, and profiling of messenger ribonucleic acid (mRNA), micro RNA (miRNA) and profiling of DNA methylation. In this review we discussed that different methods uses for the identification of different specific markers present on menstrual blood. And which markers is used to distinguish menstrual blood from peripheral blood and other body fluid. In case of presence of peripheral blood indicates a traumatic cause, whereas

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Project Report
On
“Role of Blood in Forensic Investigation with Case Study”



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Date:01/10/2021


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Role of Blood in Forensic Investigation with Case Study – A Review

Abstract

This review paper we learn about the importance of biological fluids use to help in criminal investigation. In a crime scene many type of evidence presence like a physical and biological. The body fluids are type of biological evidence. Body fluid like semen saliva, blood, tear, urine, milk and sweat etc. Body fluids have been observed to be one of the most important evidence in forensic casework. Blood is of significant evidence in crimes generally seen like murder, rape, assault, robbery, burglary, hit-and-run accidents, and game law abuses. The presence and location of any type of biological fluid like blood, semen and saliva can be provided crucial information about crime and criminal to investigator. Body fluids contain valuable personal identification DNA evidence that can identify a suspect or victim as well as exonerate an innocent person. It is not possible to detect with naked eye. For the biological fluid detection current methods are fluid type specific, with a separate, and different, test required for each biological fluid. A need for sensitive, specific and direct method which can detect, differentiate and locate human fluids on items of forensic evidences. This article analyzes the identify and test of bloodstains and bloodstain pattern and also focuses on the forensic importance and case study related to a blood.

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A Review

On

“ Examination of Semen in diabetics and non
diabetics in forensic perspective”



By

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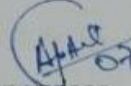
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ABSTRACT

As we all know that most of the Indians suffer from a lifetime condition called diabetes. We all know there are two types of diabetes, type 1 and type 2. Type 1 is the condition in which the person produces little or no insulin in the body to be precise they are insulin dependent on other hand type 2 they produce normal insulin or decreased insulin which cant be utilized by the liver. This can be cured by changing lifestyle. But type 1 can't be cured they are insulin dependent lifelong. According to the latest NCRB report, 2019 saw over 4 lakh reported cases of crimes committed against women, up from 3.78 lakh in 2018 and 3.59 lakh cases in 2017. NCRB reported 32,033 rape cases which translates to a shocking 88 rape cases a day.

And this is just 10% of all crimes against women. One in six people with diabetes in the world is from India. The numbers place the country among the top 10 countries for people with diabetes, coming in at number two with an estimated 77 million diabetics. China leads the list with over 116 million diabetics. My project work deals with the composition of seminal fluid majorly glucose, citric acid and fructose content. we all know semen is the most available biological fluid in rape cases, forensic scientists often collect semen for sperm which contain DNA which help in finding the suspect. The project work is about whether there is any difference between diabetic and non diabetic semen composition. If we found whether there is a difference, we can find the definite one, among suspects. The work also deals with the examination of sugar content from a dried semen stain.

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Project Report

On

**“Commercially available RSID-KIT used for the
identification of saliva: A Review”**



By- **CHAMELI SAHU**

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ABSTRACT:-

Body fluid traces recovered at crime scenes are among the most important types of evidence to forensic investigators. They contain valuable DNA evidence which can identify a suspect or victim as well as exonerate an innocent individual. Saliva is one of the most common body fluids found at a crime scene. The forensic detection of human saliva can be a very powerful tool in the investigation of crime. Saliva samples, such as those found on the butt of a cigarette smoked by an offender, the lip of a can, or the skin surface of a victim of sexual assault, frequently remain at crime scenes. A human being secretes 1.0 to 1.5 liters of saliva every day. It is a fluid largely composed of water with little amounts of electrolytes and enzymes. It is secreted by parotid and submandibular salivary glands in the mouth. Forensically, it is often seen in sexual assault cases. The Phadebas Forensic Press Test is routinely used for the detection of saliva. Statherin (STATH), a known protein marker for saliva. Statherin is a low molecular-weight phosphoprotein secreted from the parotid gland. Statherin mRNA was previously reported to be a useful marker for mRNA-based saliva identification. In this study, applicability of ELISA detection of statherin for forensic identification of saliva was investigated. However, the current protein marker assays used to identify saliva are not sufficiently specific. Although proline-rich proteins (PRPs) are highly specific for saliva, their forensic potential has not yet been investigated. Saliva confirmatory test is the RSID-Saliva kit for forensic science, which involves immunochromatography for human salivary-amylase. It is widely used because it can be tested quickly and easily. Commercially available kit is RSID-

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Project report on
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and survey of use in India

by

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Roll no. - 19405509

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**Effect of cosmetics hair treatments on cannabinoids in hair: bleaching,
perming and permanent coloring**

A Dissertation Report

SUBMITTED FOR THE PARTIAL FULFILLMENT OF
THE DEGREE
OF MASTERS OF SCIENCE
IN
FORENSIC SCIENCE



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By Tejaswini Pandhari Ramteke

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Influence of cosmetics hair treatments on cannabinoids in hair: bleaching, perming and permanent coloring.

Abstract:

An important issue of concern for drug analysis in hair is the change in the drug concentration induced by the cosmetic treatment of hair. The product used for this treatment are strong bases and they expected to cause hair damage. As a result drugs may be lost from the hair matrix or, under conditions of environmental contamination, be more easily incorporated into the hair matrix. The main aim of this study was to investigate the effect of bleaching, perming and dyeing treatment on D-9- tetrahydrocannabinol (THC), but also Cannabidiol (CBD), Cannabinol (CBN) and 11-nor-D9-tetrahydrocannabinol-9-carboxylic acid (THC-COOH) in hair. We investigated the effects of cosmetic treatment in vivo by analysing hair samples selected from people who had treated their hair by bleaching or dyeing before sample collection. All of the subjects admitted a similar drug consumption during the time period for which the strands were analysed. The samples were viewed under a microscope to find out the degree of hair damage.

Thirty hair samples was selected for study. A single hair lock was divided in two separate locks and the proximal 3cm segment was analysed. Treated and untreated portions from each lock of hair were then selected, separated and analysed by standard detection procedures for cocaine, opiates, cannabinoids and nicotine. One lock used as a control and the other lock used for bleached, permed or dyed. Hair was analysed using a routine method including cleaning, treatment of hair with NaOH and 2 different SPE extractions for THC,CBN,CBD and THC-COOH. Analysis was done by performing routine methods such as GC/MS-MS in electron impact mode for THC,CBN and CBD or negative chemical ionization mode for THC-COOH after PTV injection.

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Project Report

On

“BIOCHEMISTRY OF BLOOD: A Project”



By

KUSUMLATA

ROLL NO.: 19405511

REGISTRATION NO.: GGV/19/3201

Under the supervision

of

Dr. Ajay Amit

ASSISTANT PROFESSOR

Report submitted in partial fulfilment for the Degree of

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(Dr. Sudhir Yadav)

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Biochemistry of blood

Abstract

The presence of iron in circulating monocytes is well known as they play essential roles in iron recycling. Also, the storage of this metal as well as its incorrect uptake and/or release are important data to diagnose different pathologies. It has been demonstrated that iron storage in human blood cells can be measured through their magnetic behavior with high accuracy; however, the magnetic characteristics of monocytes have not been reported so far to the best of our knowledge. Therefore, in this work, we report, for the first time, the physical and magnetic properties of human monocytes, along with plasma platelets, oxyhemoglobin red blood cells (oxyHb-RBCs).

There is widespread interest in improving animal welfare in toxicology research, as advocated in the 3rs principles of reduction, refinement, and replacement of animal use in research and teaching. These principles advocate reduction of the number of animals used, refinement of animal use to lessen or avoid pain and distress, and replacement of animals with nonanimal safety screens. In preclinical animal use in the amount of blood necessary to evaluate clinical pathology (cp), toxicokinetic (Tk), and other endpoints required by regulatory agencies as part of drug submission packages.

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A RESEARCH ON

Study of certain characteristics of Urdu Script.

Submitted for
Partial fulfilment of the degree of
M.Sc.Hons in Forensic Science

By SAFA RUKHSAR
M.Sc. Hon's Forensic Science

Enrollment No. GGV/19/3338 Roll No.19405522

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Under the Supervision of
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Professor
Department of Forensic Science

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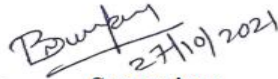
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It represents entirely an independent work from the part of the candidates.


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Dr. Sudhir Yadav
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Project Report

On

“Role of autophagy in alcohol and drug-induced liver injury”

MSC Dissertation submitted Guru Ghasidas Vishwavidyalaya, Bilaspur in partial fulfilment of the requirements of the degree

Master of science

In

Forensic Science

BY

Smriti Singh Kaushik

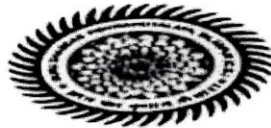
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2021

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9.Hepatic macrophage autophagy in ALD . Efavirenz . Diclofenac . Cisplatin .concluding remarks . Author contribution . Declaration of competing Interest

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Forensic odontology as a humanitarian tool

A

Project Dissertation

In partial fulfilment of the degree of
M.Sc. Forensic science (Hon`'s)
(Session 2020-2021)

Submitted by

SHRADHA NAIK

Under the supervision of

Miss. BLESSI N UIKEY

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This is to certify that the dissertation entitled “**Forensic Odontology as a Humanitarian Tool**” Submitted by Shradha Naik to Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.) for the award of M.Sc. degree in Forensic Science is the original review work done by her under my guidance I further certify that work is original and the dissertation or part of there has not formed the basis for the award of any other degree or diploma.

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Forensic odontology as a humanitarian tool

Abstract

Forensic odontology is a significant and major outgrowth of forensic sciences and, with in the bliss of justice, pacts with the examination, handling and demonstration of dental evidence within the court of law. It plays a extensive role in recognizing the human remains of the victims, not only the mutilated, burned and decomposed victims, but also the victims of bioterrorism and mass disasters. Forensic odontology is an evolving science and encompasses broad range of development. It's vital role in medico-legal matters and in the identification of the deceased. It is the application of skills of forensic science in a conflicts or disasters as a humanitarian action. Forensic odontologist promote forensic odontology and forensic science principles to caseworks with the aim of prohibiting right violation by human identification, age estimation and where ever dental evidence is involved. Teeth are well protected and also the hardest structure of the body. They prevent decomposition and high temperatures and are the last one to disintegrate after death. Dental hard tissue provide ample information in disaster victim identification, missing and unidentified persons, child abuse and neglect, domestic violence and sexual offense with bite mark evidence, age estimation of unaccompanied minors, border control and human trafficking. This article highlights the role of forensic odontologist in human identification with the aim of preventing human rights violation.

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Project work
On
Animal poison
(Scorpions)



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VISHWAVIDYALAYA BILASPUR
(C.G.)**

**Submitted to
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**submitted by
Miss Nishee janghel
MSc 4th semester
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Abstract

Poisonous organisms are represented in many taxa, including kingdom Animalia. During evolution, animals have developed special organs for production and injection of venoms. Animal venoms are complex mixtures, compositions of which depend on species producing venom. The most known and studied poisonous terrestrial animals are snakes, scorpions and spiders. Among marine animals, these are jellyfishes, anemones and cone snails. The toxic substances in the venom of these animals are mainly of protein and peptide origin. Recent studies have indicated that the single venom may contain up to several hundred different components producing diverse physiological effects. Bites or stings by certain poisonous species result in severe envenomations leading in some cases to death. This raises the problem of bite treatment. The most effective treatment so far is the application of antivenoms. To enhance the effectiveness of such treatments, the knowledge of venom composition is needed. On the other hand, venoms contain substances with unique biological properties, which can be used both in basic science and in clinical applications. The best example of toxin application in basic science is α -bungarotoxin the discovery of which made a big impact on the studies of nicotinic acetylcholine receptor. Today compositions of venom from many species have already been examined. Based on these data, one can conclude that venoms contain a large number of individual components belonging to a limited number of structural types. Often minor changes in the amino acid sequence give rise to new biological properties. Change in the living conditions of poisonous animals lead to alterations in the

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Project Report

On

"Farmers Suicide in India: An Overview"



By

MANURAJ TANDAN

ROLL NO.: 16205112
REGISTRATION NO.: GGV/16/3149

Under the supervision

of

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Farmers Suicide in India: An Overview

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Review Approach for Developing Aptasensors for Abused Drugs:
Biosensors in Forensics

A Dissertation Report

SUBMITTED FOR THE PARTIAL FULFILLMENT OF
THE DEGREE

OF MASTERS OF SCIENCE

IN

FORENSIC SCIENCE



GURU GHASIDAS VISHWAVIDYALAYA

(A Central University)

By HIMANI

M.Sc. (SEMESTER)

(Enrolment no: GGV/16/3129,

Roll no.:19405507)

UNDER THE SUPERVISION

OF

Dr. CHANCHAL KUMAR

(Assistant Professor Department of Forensic science

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Bilaspur, Chhattisgarh, India

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This is to certify that the dissertation entitled “[Approach for Developing Aptasensors for Abused Drugs: Biosensors in Forensics](#)” Submitted by HIMANI to Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.) for the award of M.Sc. degree in Forensic Science is the original review work done by her under my guidance I further certify that work is original and the dissertation or part of there has not formed the basis for the award of any other degree or diploma.

[Supervisor]

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ABSTRACT

The use of Illicit drug like cocaine and amphetamine remains a serious health and social problem causing abuse particular in adults. New searched method to detect active drugs, drug of abuse needed new technology for the detection of newly discovered psychoactive drugs. in forensic analysis Aptamer-based point-of-care (POC) diagnostics platform too can be of many benefits as they provide rapid, sensitive, user-friendly, and selective analysis tools for detection. Aptasensor to yet has not been commercially optimized. Although the importance of the application exceeded their potential. During this review here a bottom up approach is followed to describe the aptasensor development and application process, starting from the synthesis of the consistent aptamer sequence for the designated analyte to making a smart surface for the sensitive detection of the molecule of interest. For sensitive identification, it takes to create a sensible power, optical and electrical biosensing platforms, which are designed with aptamers as recognition molecules, detecting abused drugs are critically studied, and existing and probable applications of different designs are discussed. There are numerous potential disciplines in which aptamer-based biosensing technology can be of highest value, together with forensic drug analysis and biological evidence, are then highlighted to reassure researchers to concentrate on developing aptasensors in these specific areas.

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REPORT ON

**Vibrational Spectroscopy: Recent Developments
to Revolutionize Forensic Science**

Submitted in

M.sc forensic science

By

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Vibrational Spectroscopy: Recent Developments to Revolutionize Forensic Science

INTRODUCTION

During the past years, many significant advances have been made and, of the studies reviewed here, there are a few that are particularly noteworthy. Nondestructive, rapid methods for detection and identification of biological stains, with on field potential, have been reported. Through their use of multidimensional Raman spectroscopic signatures the Lednev research group in Albany, NY, has developed methods to differentiate and identify body fluids. (4, 5) The van Leeuwen research group in Amsterdam, The Netherlands, created a method to estimate the age of a bloodstain based on nearinfrared (NIR) spectroscopy (6). Similarly impressive results have been obtained in gunshot residue research. The Lednev laboratory and the Garcíá -Ruiz research group in Madrid, Spain reported independently on a new method to identify ammunition using Raman spectroscopy (7,8) An IR imaging procedure to automatically detect gunshot residue particles was also developed (9). Edward Suzuki, supervisor of the Materials Analysis Unit at the Washington State Patrol Crime Laboratory Division, has used IR spectroscopy to identify pigments used in automotive paint (10) Jürgen Popp and co-workers in Jena, Germany, have used Raman spectroscopic techniques for detecting pathogens, which is an extremely important concern for biosafety disciplines (11-14).

Vibrational spectroscopic techniques such as infrared and Raman have gained particular importance in forensic contexts because they combine a number of advantages.^{102,103} They can characterize the structure of a great number of organic and inorganic materials found at crime scenes and can help determine their identity. They are nondestructive and relatively simple to use. Moreover, the instrumental versatility of handheld, portable, imaging and sensing approaches allow for a variety of useful analytical possibilities, particularly *in loco*.¹⁰⁴⁻¹⁰⁷ Another vibrational technique with forensic application is terahertz spectroscopy (for further reading refer to Burnett *et al.*).¹⁰⁸ Its use in forensic laboratories is far less common than Raman and infrared spectroscopies, which is the main reason why it has not been considered within the scope of the present manuscript. Nevertheless, it is expected that the potential of this technique will emerge in future studies.

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A Suicidal Insecticide-Cypermethrin
A Dissertation Report
SUBMITTED FOR THE PARTIAL FULFILLMENT OF
THE DEGREE
OF MASTERS OF SCIENCE
IN
FORENSIC SCIENCE



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CONTENT:-

1. Introduction
2. Structure
3. How does cypermethrin work?
4. What are some products that contain cypermethrin?
5. How toxic is cypermethrin?
6. Cypermethrin induced neurotoxicity
7. Many types of impact
8. Pesticides that aren't insecticides
9. Common insecticides ingredients
10. Classification of insecticides
11. Synthetic poison
12. Case study I
13. Diagnosis of poisoning
14. Suicides by insecticides poisoning in india
15. Case study II

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Effects of illicit drug and alcohol addiction on Adolescent's brain development

A Dissertation Report

SUBMITTED FOR THE PARTIAL FULFILLMENT OF

THE DEGREE

OF MASTERS OF SCIENCE

IN

FORENSIC SCIENCE



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ABSTRACT:

Adolescence is a transitional phase of growth and development. It is a phase between childhood and adulthood. In this phase individual undergoes many physical, social as well as psychological changes. They start noticing their status and value in the society. While this has positive effects on their overall growth, it may also turn into a negative aspect when they are under peer pressure. Under peer pressure, to prove they belong to the group, adolescents often end up taking heavy risks such as stunts, doing unwanted dares given by their peers, drinking alcohol, smoking and doing drugs.

Using illicit drugs is highly dangerous not only for its harmful effects on body but also because they are highly addictive. Addiction can be defined as the loss of control over drug use, or the compulsive seeking and taking of drugs despite adverse consequences. Use of drugs in the important growing and brain developmental stage is more harmful because it deeply affects overall development of brain that includes grey matter and white matter thickness, memory, attention and focus. Here, we will dive deep into how addiction affects adolescent brain development.

KEYWORDS: Illicit drug, addiction, alcohol, neurotransmitters, neuropsychology, grey matter, white matter, prospective memory, adolescent brain development, cannabis, ethanol.

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Project Report

LoopOn

“A systemic review of vegetable poisoning and challenges in management”



By

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A systemic review of vegetable poisoning and challenges in management's

Content of the review

1 Abstract

2 Introduction

3 Routes of Exposure

4 The dose -Response Relationship

5 Five vegetable poison

- A) Marking nut (Semecarpus anacardium, oriental cashew nut)
- B) Abrus precatorius
- C) Ergots
- D) Croton tiglium (Jamāngoṭa)
- E) Calotropis (Madar, Akdo) Calotropis

6) Conclusion

7) References

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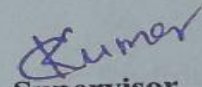
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MICROBIAL FORENSIC SCIENCE

Definition- microbial forensics refer to the investigation of the use of bioweapon and accidental release or natural development of dangerous microorganism .

The term may also inculcated the study of a person's specific microbiome for means of identification the location of a crime and the time of death of an individual based on the progress of the microbiome during decomposition .

Analysis of evidence from a bioterrorism act biocrime or inadvertent microorganism release for attribution purpose .

MICROORGANISM -

A microorganism is a living thing that is too small .We can't see with the naked eyes.

Microorganisms are beneficial in producing oxygen ,decomposing organic material , providing nutrients for plants and maintaining human health but some can be pathogenic and cause diseases in plants and humans .

TYPE OF MICROBES

Microbial diversity is truly staggering yet all these microbes can be grouped into five major types .

- 1) Prokaryotic Microorganisms
- 2) Eukaryotic Microorganisms
- 3) Fungi
- 4) Viruses
- 5) Helminths

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