A

TECHINAL REPORT

ON

STUDENT INDUSTRIAL WORK EXPERIENCE SCHEME

(SIWES)

UNDERTAKEN AT

PHAMATEX INDUSTRIES LIMITED

AMUWO, ODOFIN, LAGOS STATE.

OBIESIE CHUKWUDAALU CHUKWUDI

MATRIC NO: 17/MHS07/018

SUBMITTED TO

DEPARTMENT OF PHARMACOLOGY

COLLEGE OF MEDICAL AND HEALTH SCIENCES

AFE BABALOLA UNIVERSITY, ADO EKITI,EKITI STATE

PERIOD OF ATTACHMENT:

DECLERATION

I**, OBIESIE CHUKWUDAALU CHUKWUDI** hereby declare that this SIWES Report has been carried out by me under the supervision . All sources of information are specifically acknowledged by means of reference.

…… ……

Date. Signature

DEDICATION

I would like to formally dedicate this first to the almighty God for taking me through this period of SIWES. Secondly I will like to dedicate this to my parents who have been my back bone both financially and spiritually during the course of this SIWES, thirdly to staffs who put me through such as Pharm. Mike, Pharm Johnson,Pharm Juliet Dr. Uzo and Mr. Oyeka and so many others who helped me throughout the course of this amazing platform to learn and practice.

ACKNOWLEDGEMENT

My highest gratitude goes to the Almighty GOD once again, who supported me in different ways throughout the course if the SIWES Programme and to making my stay at phamatex to be a huge success.

I also sincerely want thank my family members who gave me advice on where to start my SIWES programme, also like to thank the board of directors at phamatex for this wonderful platform being given to me.

I sincerely wish to express my gratitude to the S.I.W.E.S unit of AFE BABALOLA UNIVERSITY , ITF and also the entire staff of the department of Pharmacology .

Still in the reign of appreciation, I wish to express my deep appreciation to the entire staff of Phamatex Industries Ltd,to all quality control staffs I say a very big thank cause I got to learn so many diverse things here and to other departments where I

worked I say a very big thank you and wish you all good luck in your future endeavors .

ABSTRACT

The Student Industrial Work Experience Scheme established by the Federal Government of Nigeria was aimed at exposing students of higher Institutions to acquire Industrial skills and practical experiences in their approved course of study and also to prepare students for the industrial work situation, which they are likely to meet after graduation. During the course of my Industrial Training I was posted to the pharmatex industries limited, Pharmatex industries limited was established in the year 1994. It is a place where research and developmental activities undertaken are those of relevant to the field of medicine and healthcare, food, agriculture industrial development, environment protection and energy production.

TABLE OF CONTENTS

CHAPTER ONE

BRIEF HISTORY OF SIWES AND ITS OBJECTIVE

The early phase of science and technology in Nigeria was characterized by the theoretical lectures in polytechnics and universities which have proven to be an ill method of teaching. Students in Universities and Polytechnics graduate with little or no technical experience in their course of study.

In the same vein, students' inability to contribute to the society is hampering the growth and development of our country. It was in this view that SIWES was introduced to the Industrial and Educational sector.

SIWES is an acronym for Student's Industrial Work Experience Scheme. SIWES was established in the year 1973 in order to improve the standard of education in Nigeria in order to achieve the needed technological advancement.

Economists being able to evaluate the role technology plays in a country's economy concluded that for an economy to grow and develop there be advancement in the technology sector of the country.

SIWES was solely funded by ITF (Industrial Training Funds) during it early stage not until it was difficult to continue for economic stress: then the responsibility was shared between Industrial Training Funds (ITF) and the Federal Government.

The Federal Government took over the funding of the scheme and Industrial Training Funds took over the managerial position by managing the funds given to them by the Federal Government in order to sustain the scheme.

SIWES (Student's Industrial Work Experience Scheme) is a scheme for the duration of sixteen weeks (4 month OR 6 months). SIWES is done after the first year in polytechnics (ND1); and done after Second year or third year in Universities depending on the institutions.

The effective management of Student's Industrial Work Experience Scheme (SIWES) has been as a result of the cooperation and well played roles of the Federal Government, ITF, Supervising agencies.

ROLES OF THE FEDERAL GOVERNMENT

Federal Government being the major party in the establishment off SIWES; has ever since been involved in the management of SIWES. Some of the roles played are:

- To make it mandatory for all ministries, companies and parastatals to offer places of attachment for students in accordance with the provision decree of No 47 of 1971 as amended in 1990.
- To provide necessary and adequate funds to ITF through the Federal ministries of industries.

ROLES OF ITF (INDUSTRIAL TRAINING FUND)

- Provide logistics and materials needed to administer the scheme
- Supervise students through its Area offices.

OBJECTIVES OF SIWES

1. To expose students to work methods and technique.
2. To provide an avenue for students to acquire industrial skill.
3. Enhancing students' contacts with potential employers while on training

To help students appreciate the role their professions play in the society.

CHAPTER TWO

Projects Carried Out

DESCRIPTON OF PHAMATEX INDUSTRIES LTD.

PHAMATEX Nigeria Limited was incorporated in Nigeria as a private limited company on the 24th day of January, 1994.

Its share capital stands at N10,000,000.00(Ten Million Naira only). From the onset, the company was fashioned to be a corporate leader and has, ever since, kept both pace and faith with this vision. With a continuous flow of immeasurable goodwill from the Directors and clients alike, Phamatex has shown a great knack for entrepreneurial inventiveness and has manifested enviable growth record and profound business leadership potentials as substantiated by the profitability indices for the period it has been in operation. The company situates at ,No 1, Crystal Glass Close, Amuwo Odofin Industrial Estate, Lagos. Nigeria comprising of both Administrative Head office for importation of HOVID INNOVATIVE, QUALITY, W.H.O STANDARD PHARMACEUTICAL PRODUCTS carries with her years of invaluable experience in the pharmaceutical industry.

AWARDS

- THE ASSOCIATION OF GENERAL AND PRIVATE MEDICAL PRACTITIONERS OF NIGERIA, 2011
- ASSOCIATION OF COMMUNITY PHARMACISTS OF NIGERIA 2011
- THE BOARD OF FELLOWS PHARMACEUTICAL SOCIETY OF NIGERIA ,2012

- ASSOCIATION OF COMMUNITY PHARMACISTS OF NIGERIA ,2012
- SAVING LIFE FOR AFRICA DIABETES FOUNDATION, 2012
- ASSOCIATION OF MOVIE PRODUCERS OF NIGERIA ,2013
- LAGOS STATE MEDICINE DEALERS ASSOCIATION, 2016
- FILM & VIDEO PRODUCERS AND MARKETERS ASSOCIATION OF NIGERIA, NOLLYWOOD, 2016
- ASSOCIATION OF COMMUNITY PHARMACISTS OF NIGERIA ,2018

PRINCIPAL ACTIVITY

The company is engaged in the importation and marketing of pharmaceutical products in Nigeria. It is the "exclusive agent" to HOVID Sdn Bhd, a revered company name in drug manufacture in

Malaysia and the relationship has spanned so many years and is waxing stronger based on mutual trust and understanding. Since its appointment as the Nigerian sole agent to Hovid about twenty years ago, PHAMATEX has achieved formidable results in the sale and distribution of many of HOVID's wide range of over 500 brands of Pharmaceutical products, This no mean feat was achieved through a deliberate and consistent policy of product availability and advertising.

PROCUREMENT SERVICES

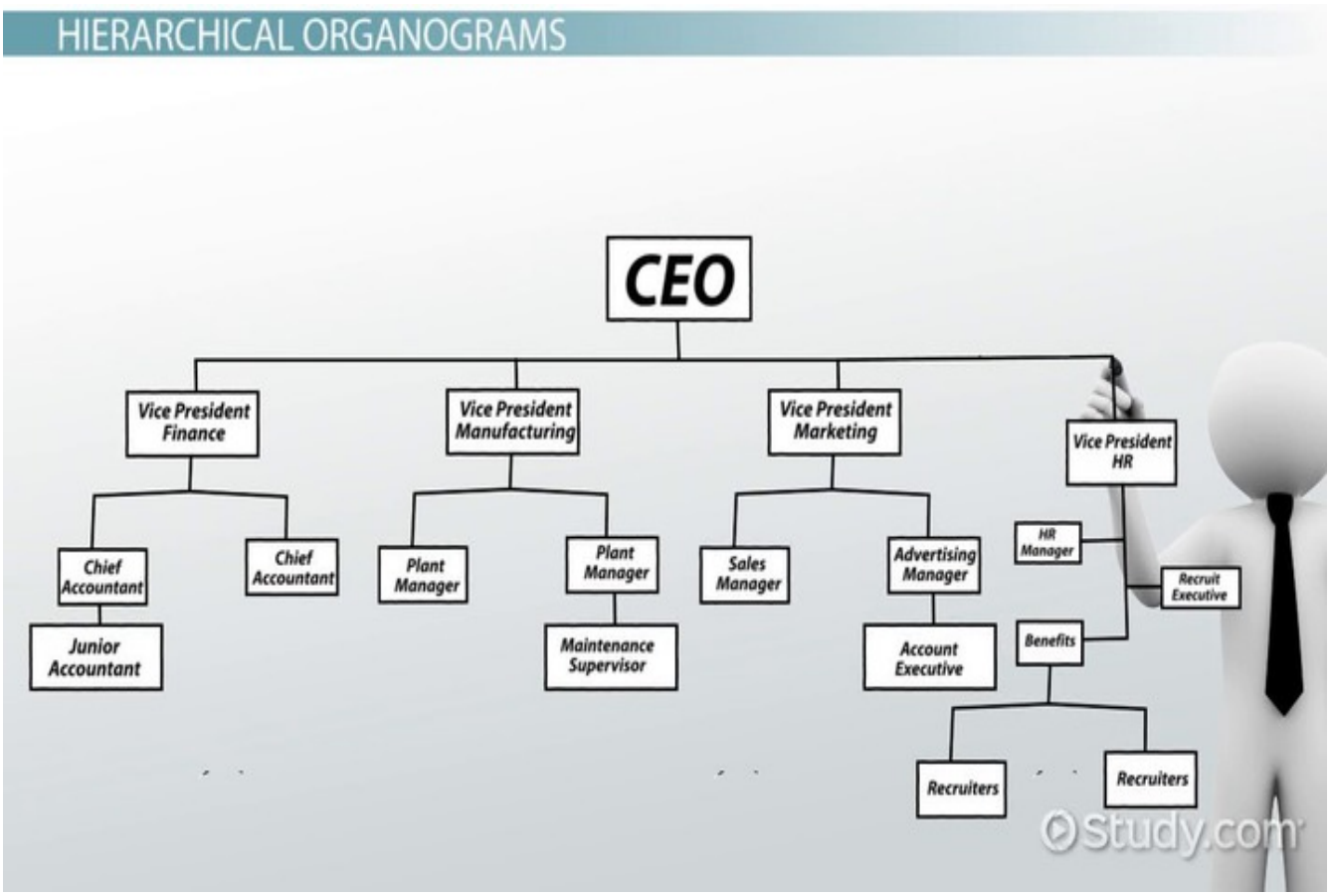
As a result of the company's strong connection with "Hovid" whose product quality rank among the best across the globe, PHAMATEX is well positioned to relieve citizenry of the encumbrances and procedural bottle-necks involved in procuring stringent quality products. Our lead-time is reasonably short at competitive costs.

PHAMATEX NIGERIA LIMITED has the required professional skills, experience as well as human and material resources required to do good business and is an ideal business partner with any financier banker that accepts to support its activities. Above all, the operations of the company are guided by high moral considerations.

BOARD AND MANAGEMENT TEAM

The companies is blessed with a dynamic and well –focused Board of Directors, who occupy the APEX positions and the management of the company's daily operations is safely placed in the hands of young and energetic professionals of diverse orientations and training. These young professionals are willing and indeed have been lending their youth, experience and energy to the company for the realization of its noble and enviable objectives.

ORGANOGRAM



VARIOUS UNITS IN PHAMATEX INDUSTRIES LTD.

4. QUALITY CONTROL
5. PRODUCTION UNIT
6. WAREHOUSE
7. ENGINEERING
8. WATER PURIFICATION UNIT.
9. ADMINISTRATIVE UNIT
10. NON WORKING STAFFS
11. RESEARCH AND DEVELOPMENT

- **QUALITY CONTROL (Q.A):** incorporates good manufacturing practices (GMP) and also monitors all the stages of production, ensures our site is healthy and also conforms to our global standard.

- **PRODUCTION UNIT:** This where all manufacturing is being done with different sections such as coating , granulation, compression , drying and so many more .

- **WAREHOUSE:** we put in work in making sure our employees are safe and our products are also safe including all raw materials. This section of unilever takes charge of the care of all materials.

- **ENGINEERING:** This section makes sure anything that has to do with engineering is appropriately taken care of. Including the water purification unit, its under the engineering unit.

- **ADMINISTRATIVE UNIT:** Take care of every process of administration.

- **NON WORKING STAFFS**: This section sees to the daily running on ensuring neat and adequate environment in the company such as cleaners, lab assistants.

- **RESEARCH AND DEVELOPMENT**: This phase we get to research on various things which could help in making upgrades for products or finding new inventions that would help the company grow.

ACTIVITIES CARRIED OUT DURING SIWES:

During my SIWES I worked mostly with the quality control lab where they check on different parameters of products being brought for testing.

My first two and the half month, analyzing coherently with specialist, analyzing products such as Aerosil, Lumapil Forte,Famagyl{200mg,400mg},Paratex,Piloxicam Capsules,Pilprofen,Cetidyn syrup Areactin tablet and so many other products.These are different things I practiced during my stay ;

GMP: First things first I was introduced with certain rules governing the company known as the Basic Good manufacturing Process{GMP}, some of these rules were no use of jewelries,no drinking,no chewing or smoking ,also always compliantly dressed

with the right lab coat for work and a group of other things which was being passed across to me to avoid hazards in the company.

Physical Parameters: This was majorly done at the Quality Control lab, where we get to check the quality of all products with parameters such as hardness, friability, thickness, disintegration, weighing. For the hardness we use the hardness tester to try and test the drugs to know whether its right for the human body which is measured in Kgf. While disintegration is done to ensure a certain time when the products gets to dissolve in the human body and is done with the disintegration timer. The friability is being done to ensure that the drugs survive any form of distortion and is carried out using the friabulator. We also check the weight of the products using the analytical balance. All these are being done to ensure adequate accuracy in production.

Assay by UV:

Standard preparation: Weigh accurately 1000mg of metronidazole in to a clean dry100ml volumetric flask, added 50ml of methanol and sonicate for 30 minutes to dissolve and make up the volume to the mark with the medium. Filter the solution and further dilute 2ml to 50ml with diluent.

Sample Preparation: Weigh accurately 10 tablets and crush into powder. Weigh accurately 250mg of the powder into a clean and dry 100ml volumetric flask, add 50ml of methanol and sonicate for 30minutes to dissolve and make up the volume up to the mark with the medium. Filter the solution and further dilute 2ml to 50ml with diluent.

Dissolution by UV:

Preparation Of Dissolution Medium: For preparation of 7 litres of dissolution medium, measure accurately 6 litres of water into a beaker, pipette 59.5ml of concentrated hydrochloric acid into 1000ml volumetric flask containing purified water and make up to volume with the same solvent. Mix and add to 6 litres of purified water inside the beaker and stir the solution.

Sample Preparation: Weigh 1 tablet and insert into dissolution vessel in 900ml of dissolution medium. After 1hour withdraw 10ml and filter through whatmann filter paper. Further dilute 2ml to 50 ml with the dissolution medium.

Moisture analysis; Moisture analysis covers a variety of methods for measuring moisture content, knowing the water content in the given sample. They are various ways of analyzing moisture. Namely;

1. Moisture analyzer; for testing the percentage of the water in the sample, works with weight and moisture.
2. Karl fischer; Karl Fisher Titration is a technique for the determination of moisture content. The technique was developed by a chemist named Karl Fischer. It is based on a reagent which reacts with water and converts the water into a non-conductive chemical. Also deals with weight.
3. Oven drying method: this is another way of determining moisture content in a substance, the sample is weighed with container and then heated, after heat, its weighed, then deducted from the initial weight.

- The substance to be analyzed determines the method of mosture analysis to be used, to check the moisture content of an iodized salt,EDTA- a moisture analyzer is involved. To analyze sodium bicarbonate, oven drying method or karlfischer method is preferable.

Particle Size Distribution (PSD): In particle size distribution, the apparatus used is known as sieve shaker & mesh. The essence of the analysis is to understand the particle sizes of the powders used in the production of our product, so as to have a proper and better form of crystallization. The size of a particle is essential in forming a crystal, for example, to make our roycobullion cube, we will have our sugar, salt and other materials, to properly have a bullion cube that will conform to our standard, you have to have particles sizes that are intact.

Using the sieve shaker & mesh, you have to know what material youre analyzing, the material gives an insight of what to do, the sieve shaker shakes the samples in it and separate them according to their crystal sizes.

Percentage purity of salt: To determine the content of salt in the unknown sample. Mainly iodized salt;

- You weigh your salt using an analytical weighing balance according to spec
- Add deionized water (50ml)
- Add potassium cromate (K2Cr2O7), as an indicator
- Then titrate with silver nitrate (0.1N) till colour changes.

Determination of iodine value (I.V): Iodine numbers are often used to determine the amount of unsaturation in fatty acids, this process is therefore essential to determine the amount of unsaturation in the sample.

- Weigh the sample into two (2) different conical flask repectively and leave one flask empty as the blank. weigh less than 0.4
- Dissolve the sample weighed with 15ml of chloroform
- Add 25ml of wiji's solution using a pipette.
- Cover in the dark for 30mins, for digestion
- Add 20ml of KI 10% w/v
- Add 150ml of distilled water
- Titrate with 0.1N of sodium thiosulphate using starch solution as the indicator. Until color change.

Samples like RBDPO (refined bleached deodorized palm oil), palmterine, tallow are likely to undergo this analysis.

Free fatty acid (F.F.A): This is to determine the acidity of the fatty acid in the sample.

- Prepare the reagent, each conocal flask having equal amount of chloroform and ethanol (25ml each)

- Then neutralize before titration by adding phenolphthalein and 0.1N of NaOH
- Add your reagent into the sample weighed which is 4g
- Titrate with phenolphthalein

(Tital value X molar mass X conc)/ weight X 10

Bulk density (BD): using autotap density analyzer, to know the density and actual weight of the sample.

Slip melting point (SMP): We make use of the capillary tube, deep into the sample to take the content, freeze for an hour and make use of the melting point analyzer. This analysis is essential because the melting point of these samples so as to know their duration before they cake.Eg; embanox, dimodenetc

Power of hydrogen (pH): To determine the concentration of the sample. Weigh the sample and dissolve in 100ml of water depending on the specification. Then use the pH meter.eg; roast whie, EDTA, royco flavor powder.

Color: This is determined by using Spectro-colorimeter, determining an unknown substance/ compound using characteristic absorption spectra, to understand the color of the sample delivered, color analysis is done. There by, using a lovibond tintometer.Eg; dimoden, tallow, RBDPO.

Water Analysis: This is used to check the PH and conductivity of different water units in the company to ensure that the water is always at its standard for adequate use .

Use Of UV Spectrophotometer: This is usually used to determine the final results for the assay, dissolution, and also the swab test. It is always run using a certain standard and we also use it for rinse water.

Rinse water: This is usually done when equipments are washed, to confirm that the equipments are still 100% okay for use. We then carry small water samples from an

exit point of the equipments using the uv spectrophotometer to check the absorbance level.

Purity analysis: This analysis is carried out on caustic soda, to know the concentration of the sample if it conforms to requirement.

- Weigh less than 1g of caustic in a conical flask
- Add 50ml of distilled water
- Two drops of 0.5N of phenolphthalein
- Titrate with 0.5N HCL until it turns colorless

To ensure our product conform to our standards, our packaging materials should also conform to our global standards.

These are the basic analysis done;

1. Grammage; the density of the fibrite or wrapper. The instrument used is known as template. Its placed on the fibrite and it's a square shaped instrument. Then the fibrite is cut out and weighed to know the weight.
2. Dimension: to know the dimension of the packaging material. The material used is known as tape rule.
3. Thickness: the instrument used is known as a micrometer. Placed in between the material.
4. Weight: this is a basic form of determining the weight of the packaging material using a weighing scale. (note; the weighing scale to be used is a top loading weighing balance.

Then, the other half was spent in the boiler house, the water treatment sector, before production or analysis or consumption, there's something that should be highly

considered, the purity of the water. Our water is well distilled depending on the plant that uses it.

For industrial use, the processes are;

1. Containment: having the water after pumping and the height of the borehole really matters.
2. Screening: that's having a form of filters and blower to remove dirt at the initial stage.
3. Chlorination: this is process of dosing sodium hypochlorite in the water to bleach and purity the water.
4. Coagulation: addition of coagulant in the water to also further purify the water. Coagulant could be alum.
5. pH adjustment: thereby making sure the concentration of the water conforms to our standard by either dosing HCl if its basic or using NaOH if its acidic.
6. Sedimentation: removal of visible solids in the water after the water settles.
7. Filtration: there different types of filtration system

a) Sand filter
b) Membrane filter
c) Carbon filter

8. Distillation: there various kind, ion exchange, distiller, UV treatment, reverse osmosis

During the course of my stay at the production phase I got to learn certain terms such as:

Binders: They are used as binding agent in tablets. It provides cohesive strength to powdered materials. Binders are added in both dry and wet form granules. Examples of binders are gelatin, glucose, lactose, ethyl cellulose, hydoxl propyl cellulose and so many others.

Lubricants: They are used to reduce the friction between die wall and tablet, preventing adhesion of tablet to dies and punches. Helps in easy ejection of tablets from die cavity.

Glidants: This helps in free flowing of granules from hopper to die cavity. Minimize friction between particles. Examples are colloidal silicon dioxide{Aerosil}, corn starch and many more.

Anti Adherents: they are added to prevent adhesion of tablet material to punches and adies, for example talc.

Super disintegrant: When they come in contact with water in the oral cavity /GIT they break down in to small particles for example sodium starch glycollate.

Here are some characteristics of disintegrants:

-Poor solubility

-Poor gel formation

-good hydration capacity

-Good compressibility and flow properties

Factors affecting action of disintegrant ;

-Types of substances present in the tablets

-Hardness of the tablet

-Nature of the substance

TYPES OF EQUIPMENTS USED:

Encapsulators: They are also called capsule fillers, capsule filling machines or encapsulation machines are mechanical devices commonly used for industrial and pharmaceutical purposes. These machines are used to fill empty soft or hard gelatin capsules of various sizes with powders, granules, semi-solids or liquids substances containing active pharmaceutical ingredients or a mixture of active drug substances and excipients. This process of filling empty capsules with substances is termed encapsulation.

Rotary tablet press: is a mechanical device that unlike the single punch tablet press has several tooling station which rotates to compress granules/powder mixture into tablets of uniform size, shape (depending on the punch design) and uniform weight. It was developed to increase the output of tablets.

Single punch tablet press: also called eccentric press or single station press is the simplest machine for tablet manufacturing. Single punch tablet as the name implies employ single set of station tooling that is a die and a pair of upper and lower punches.

The compaction force on the fill material is exerted by only the upper punch while the lower punch is static; such action equivalent to hammering motion and as a result, the single punch press is referred to as stamping process. The single punch tablet press produces about 60-85 tablets/min e.g. Manesty F3.

Tablet press: They are also referred to as tabletting machine, pharmaceutical tablet press, tablet compressing machine or tablet punching machine is a mechanical device that compresses powders into tablets of uniform size, shape, and weight containing approximately the same quantity of Active Pharmaceutical Ingredient (API) and excipients. Apart from its use in the pharmaceutical industries for manufacturing varieties of tablets, it can also be used to manufacture illicit drugs, cleaning products and cosmetics.

All tablet press employs the same basic principle of compression. The basic unit of any tablet press is tooling consisting of two punches and a die called a station. The upper and lower punches come together in the die that contains the tablet formulation

.

A vibration mill: is a size reduction equipment that applies the process of continuous impaction in carrying out its size reduction function. The grinding container is made up of a tube that is held in a frame that is supported by means of springs which is filled to approximately 80% total volume with porcelain or stainless steel balls. Vibration mills are similar to ball mills in that particles of the materials are crushed between porcelain or metal balls and the mill body.

Fluidized Energy mill: also known as micronizer or jet mill is a type of mill that consists of a hollow toroid which has a diameter of 20-200mm depending on the height of the loop which can be up to 2m. by particles impaction and attrition. A fluid or milling gas, usually air or inert gas is injected as a high-pressure jet through nozzles at the bottom of the loop. The powder particles in the mill are accelerated to high velocity. The kinetic energy of the air plus the turbulence created causes interparticle (particle-particle collision) and particle-wall contact resulting in particle size between 2 and 10 micrometres. The fluidized effect transports the particles to a classification zone where the size classifier retains the particles until sufficiently fine to be removed. The particle size and share are determined by;

- The speed of air/inert gas
- Feed rate and size
- The configuration of the mill

Cutter mill: is a size reduction equipment consisting of a series of uniformly spaced knives (2 to 12 in number) attached to a horizontal rotor (rotating knives) which act against a series of stationary knives attached to the mill casing. The bottom of the mill has a screen attached to control the residence time of the particles inside the mill head.

Size reduction process involves successive mechanical sheering of the feed material with the help of sharp knife.

GRANULATORS: are machines that form small particles into permanent aggregates to render them into free-flowing state. In Rotating Shape Granulators, the machine shell or the entire mixer shell rotates at a moderate speed around an axis parallel to the ground resulting in the mixing of materials and granulation process. Particle densification and/or agglomeration is by incorporation of a granulating fluid into the powder mix with low-power-per-unit mass through rotation of the containing vessel and/or intensifier of a cylinder and the rotation speed in rpm(revolution per minute) of the vessel is a function of the vessel size.

MOISTURE ANALYZER

It consists of a weighing unit and a heating unit (infrared technology) and is used to determine the moisture content of a sample with the loss on drying principle. Today

many customers use a moisture analyzer because they want to analyze moisture content using the fast and easy loss on drying method.

FUME CUPBOARD

Fume cupboards are used widely in laboratories and are designed to capture and remove air-borne hazardous substances generated during laboratory experiments (e.g. gases, vapours, aerosols and particulates/dust).

HARDNESS TESTER

Hardness testing enables you to evaluate a material's properties, such as strength, ductility and wear resistance, and so helps you determine whether a material or material treatment is suitable for the purpose you require.

ANALYTICAL WEIGHING BALANCE

Analytical weighing balance, used for the accurate weighing of samples and precipitates. For usual analytical work the balance should be able to determine differences in mass of 0.1 milligram (about 0.000004 ounce).

DISSOLUTION TESTER

Dissolution tester is a requirement for all solid oral dosage forms and is used in all phases of development for product release and stability testing. It is a key analytical test used for detecting physical changes in an active pharmaceutical ingredient (API) and in the formulated product.

COMPRESSOR MACHINE

PHOTO CREDIT: TECHNO CONSULTANCY SERVICES AND LEGEND PHARMA TECHNOLOGIES

FLUIDIZED BED DRYER

Fluidized bed dryer (also called fluid bed dryer) is a kind of equipment used extensively in the pharmaceutical industries to reduce the moisture content of

pharmaceutical powder and granules. ... In fluidization process, hot air is introduced at high pressure through a perforated bed of moist solid particulate.

LEAK TESTER

Leak testing equipment is used to measure the escape of liquids, vacuum or gases from sealed components or systems. ... Such types of leak testing equipment are often equipped with various other components such as pumps, calibrators, gauges and cases.

PH METER

PH meter, electric device used to measure hydrogen-ion activity (acidity or alkalinity) in solution. Fundamentally, a pH meter consists of a voltmeter attached to a pH-responsive electrode and a reference (unvarying) electrode.

CHAPTER THREE

PROBLEMS ENCOUNTERED AND PROBLEMS SOLVED DURING SIWES.

Problems

- Lack Of Orientation: Most internship students aren't being properly informed by their schools and departments on what the siwes is all about. Sometimes, they aren't guided on how to make payments for the collection of their receipts, forms and logbooks. As a result, they end up securing a place late for

their trainings. Among the SIWES challenges faced, this is one of the most important.

- Report Presentation : Most schools and lecturers are only interested in how well their internship students were able to defend and present their works, other than how much was benefitted and gained from the training. As a result of this ,you may likely find a situation whereby a student who actually participated and benefited from the programme is awarded a poor grade due to stage fright.
- Laziness Of Workers: The high rate of laziness exhibited by some workers in firms where students undergo their industrial training is becoming quite alarming. Majority of these workers sometimes sees and takes the internship students as servants.
- Lack of Support: Majority of internship students aren't being paid. Some firms, despite being financially stable find it very difficult to pay their interns. Certain companies go as far as charging the internship students certain fees.
- Documentation Format: Sometimes, I.T students aren't being shown and taught the proper ways to correctly fill in their SIWES logbooks and report writing.
- Limited I.T spaces: Firms accepting students for industrial training in the country ar relatively few in number.

Solution

- Proper SIWES Orientations: Students should be taught and shown the proper ways to:
    - Pay, collect, and submit their receipts, forms and logbooks
    - Write and forward their SIWES application letters
    - Fill in their logbooks
    - Write their reports.
- Adequate supervision and care: The school and departments should ensure to always try and make out time to visit their internship students in their various

workplaces to visit their internship students in their various workplaces to monitor, grade and advise them on the right things to do.

- Firms and employers support
- Seriousness and dedicaton from students
- Provision of I.T spaces

CHAPTER FOUR

Summary, Recommendation & Conclusion

Summary

I got to learn a lot during my time at PHAMATEX INDUSTRIES LIMITED where i majorly worked at the quality control laboratory. At this this phase I ran physical parameters pertaining finished products and also ran assay and dissolution on different types of drugs in the company.Also got to run PH and conductivity level of different water units around the company. Also ran rinse water with the UV spectrophotometer. Then I moved to the production phase where I leant a lot on the different stages of production e.g. binding, compression, granulation, packaging and so many more. I feel that the gap has been bridged between practical aspect and the theoretical aspect pertaining our field with this SIWES programme.

Recommendation:

- I propose that more time should be given to the students of biochemistry after graduation to gain more laboratory knowledge through internship.
- I recommend that more preference should be given to the power sector so as to provide adequate light to various medical laboratories in the country.
- I recommend that government should provide placements for students undergoing siwes in the several fields of Nigerian economy.

Conclusion:

My three months at PHAMATEX INDUSTRIES LIMITED has been one of the most interesting, productive, instructive and educative experience in my life. Through this training, I have gained new insight and more comprehensive understanding about the real industrial working condition and practice and also improved my soft and functional skills.

All these valuable experiences and knowledge that I have gained, were not only acquired through the direct involvement in task but also through other aspects of

training such as; work observation, supervision, interaction with colleagues, supervisors, superiors and other people related to the field. It also exposed me to some certain things about medical environment and factory/industrial workspace or environment and from what I have undergone, I am sure that the Industrial Training Program has achieved its primary objective.