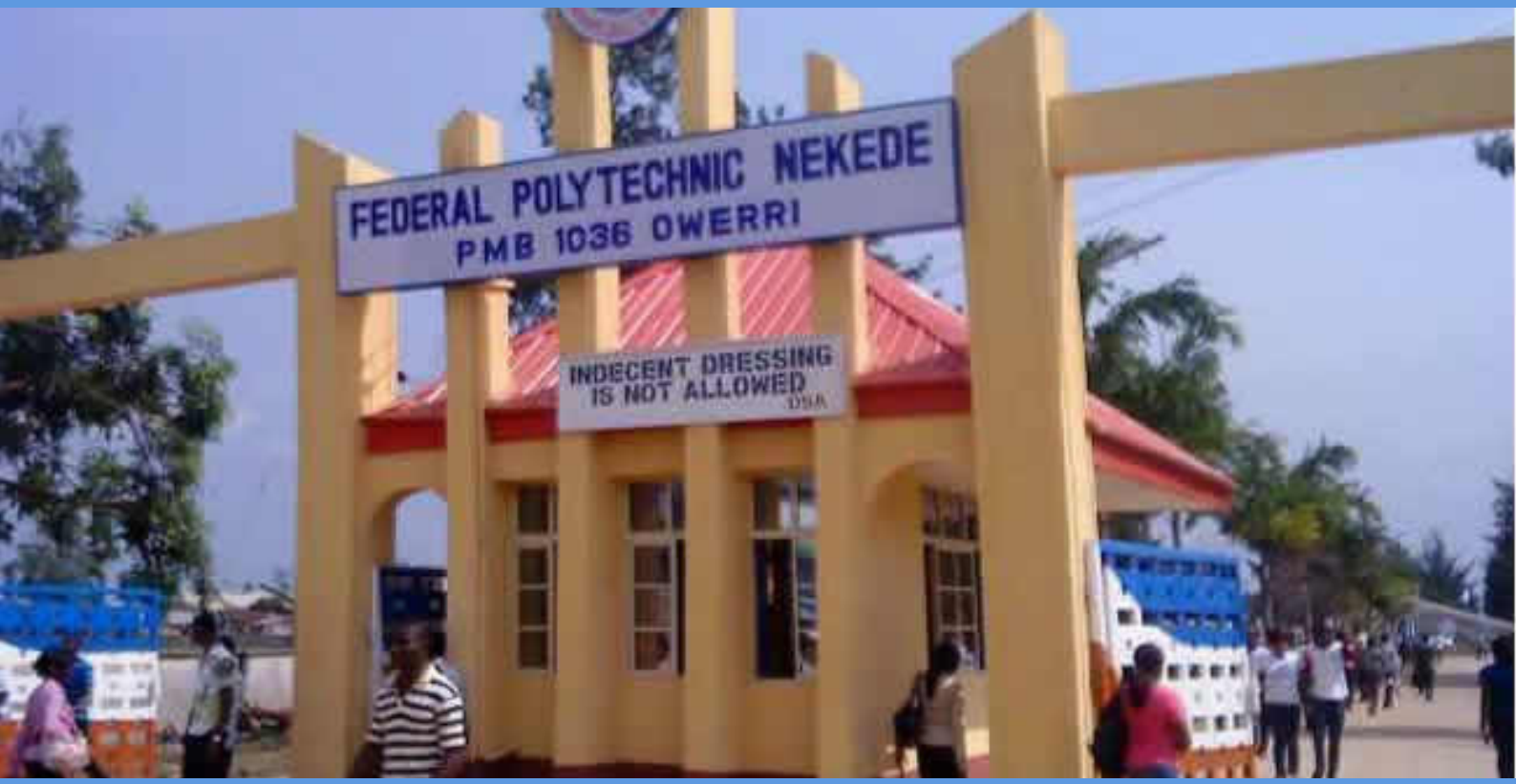
FEDERAL POLYTECHNIC NEKEDE

OWERRI IMO STATE



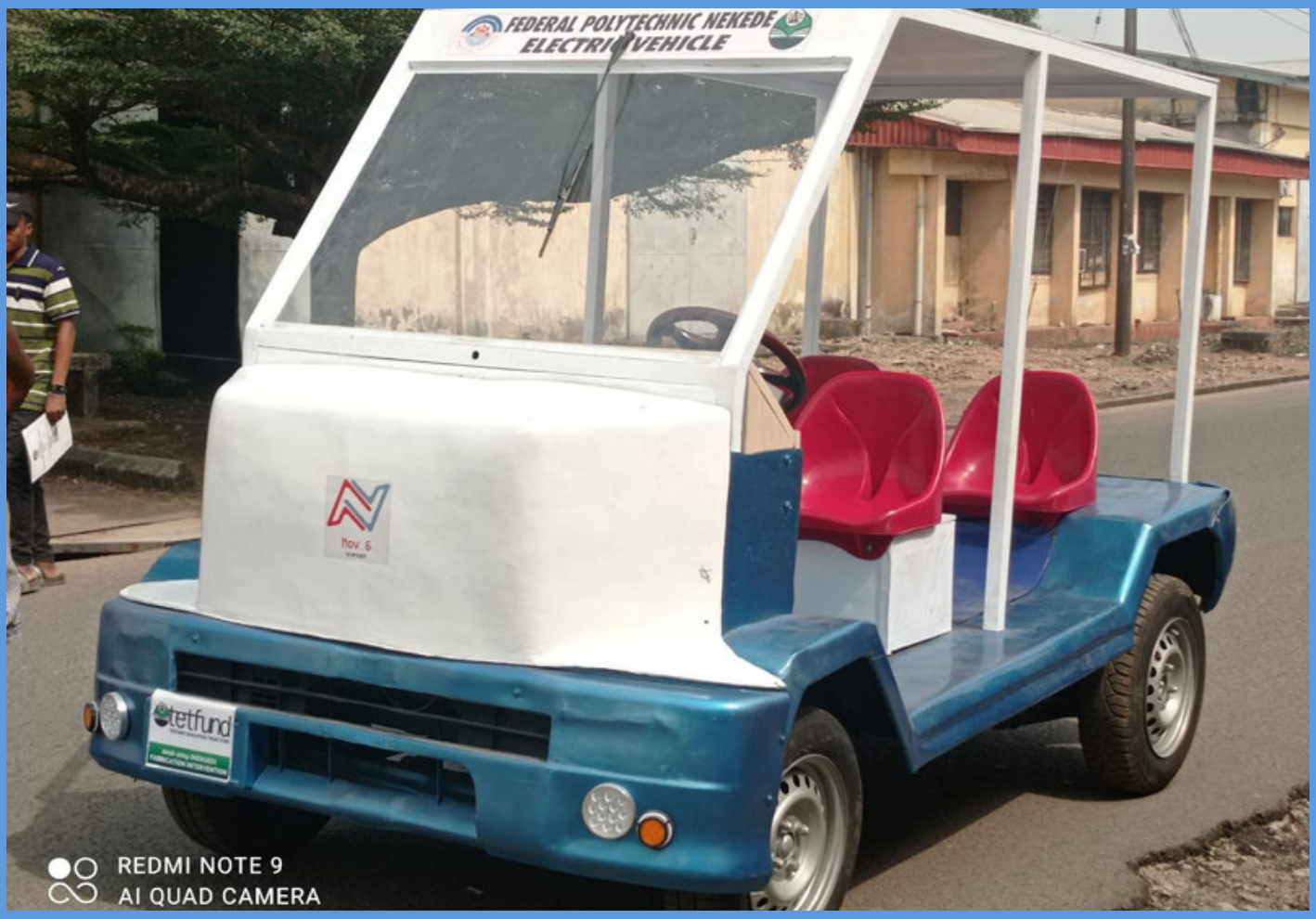
FEDERAL POLYTECHNIC NEKEDE

OWERRI IMO STATE

Brief History of the Institution

The Federal Polytechnic, Nekede is a federal government-owned higher institution located in Nekede, Owerri West local government area in Imo State, South-Eastern Nigeria. It was established on a temporary site at the premise of Government Technical College by the Imo State government in 1978 as College of Technology, Owerri before it was moved to its present location in Nekede. On 7 April 1993, the polytechnic was changed to a federal government institution and was renamed "The Federal Polytechnic, Nekede".

The Federal Polytechnic, Nekede offers National Diploma and Higher National Diploma courses at undergraduate levels.



Research Title: Fabrication of an Electric Car

Brief description

This car has been produced with 85% local materials, mostly waste materials. A portion of the body was made from recycled metal scraps while the front bonnet of the car was produced with a composite material composed of waste cow hooves and used bamboo sticks. The car can be charged using the solar panel installed on top of the car. It can also be charged with the normal 13amps electric point at our homes.

Department: Mechanical Engineering Department
Principle Researcher: Engr. Pius Chinedu Nwosu
Co-researcher(s): Engr. Vincent Korie & Engr. Chinedu Okwaraoka
Sponsor: Tetfund

Research Title: Fabrication of Multipurpose Bending-Corrugating Machine

Brief description

Multipurpose Bending - Corrugating Machine is the chief Machine tool for fabrication Shops that are fabricating high quality Metal burglary proof protectors, Railings, Gates etc. It is a versatile machine for use in every fabrication shop to create different shapes of metal rods, pipes and bars for ornamental / improved aesthetics of the fabricated products.

Functions

a. **Metal twisting:** It is used to twist iron and steel material (pipes, rods and bars)
b. **Bending (circle forming):** This machine is also used for circle-bending of metal pipes, rods and bars at any required radius.
c. **Coil rolling:** It has the capacity of beautifying metal material through coiled rolling.
d.**Corrugating:** It could be deployed to achieve corrugation of pipes and rods of different sizes.

Applications

These twisted, bent, Coil-rolled or corrugated metal products are used for decorative / ornamental purposes on the following fabricated products viz ;
(a) metal burglary proof protectors (window frames, walls, doors and door protectors)
(b)Metal railings (fence rail, Stair rails, Walkway rails etc)
(c) Metal gates etc

Department: Mechanical Engineering Department
Principle Researcher: . Engr. Mong, OKe Oke
Co-researcher(s): Engr Dr. Chijioke Chiemela
sponsor: Tetfund

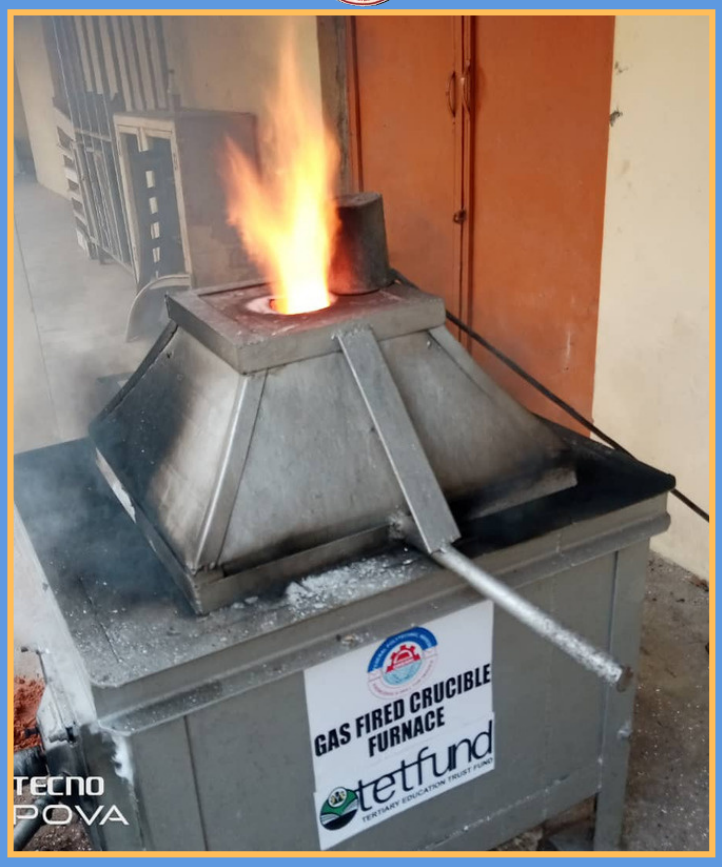
Research Title: Design & Fabrication of Palm Fruit Digesting Machine

Brief Description

This is one of the semi mechanized agro machinery equipment used in the processing and digesting of parboiled palm fruits. It is made of of mild and high carbon steel . The digesting chamber is made of high carbon steel.

Palm Fruit Digesting is usually the last operation required to be performed on parboiled palm fruits before the separation of palm fruit kernel is achieved. this thus, leads to the realization of palm fruit oil occasioned by squeezing

Department: Mechanical Engineering Department
Principle Researcher: Engr. Dr. Adikwanduaba Sylves
Co-researcher(s): Engr. John clever
Sponsor: Tetfund

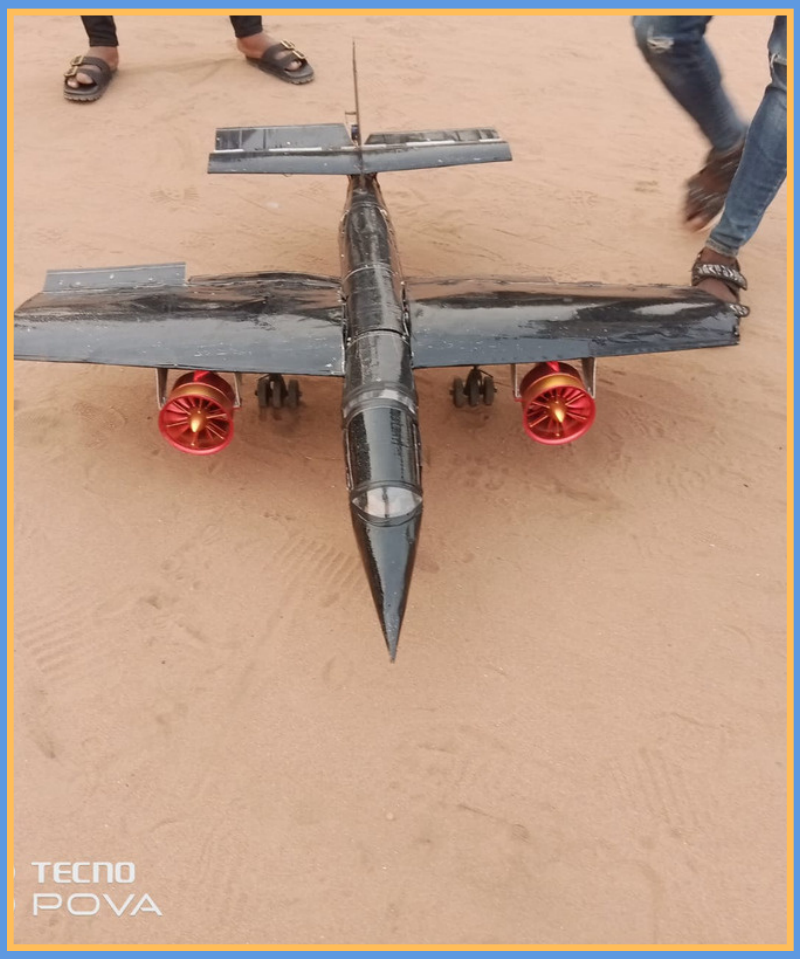


Research Title: Design & Fabrication Gas Fired Crucible Furnace

Brief Description

This piece of equipment is fabricated using mild steel and refractory materials. it is designed to melt both ferrous and non ferrous metals. On test run the furnace melted steel which melts at 1500 degrees Celsius in less than twenty five minutes. The piece of equipment could be regarded as one of the fastest melting furnaces ever known and fabricated . The furnace is made up of some vital parts such as : gas injecting units, air blowing unit , gas and regulatory parts, over head tank and stand, chimney and gas deflecting unit etc. it is one of the vital equipment required in the production of engineering and machinery spare parts by melting and casting. it can produce up to 1500kg of molten metats in less than 4hours of continuous blast.

Department: Mechanical Engineering Department
Principle Researcher: Engr. Dr. Adikwanduaba Sylves
Co-researcher(s): Engr. John clever, Adi Kelechi
Sponsor: Tetfund

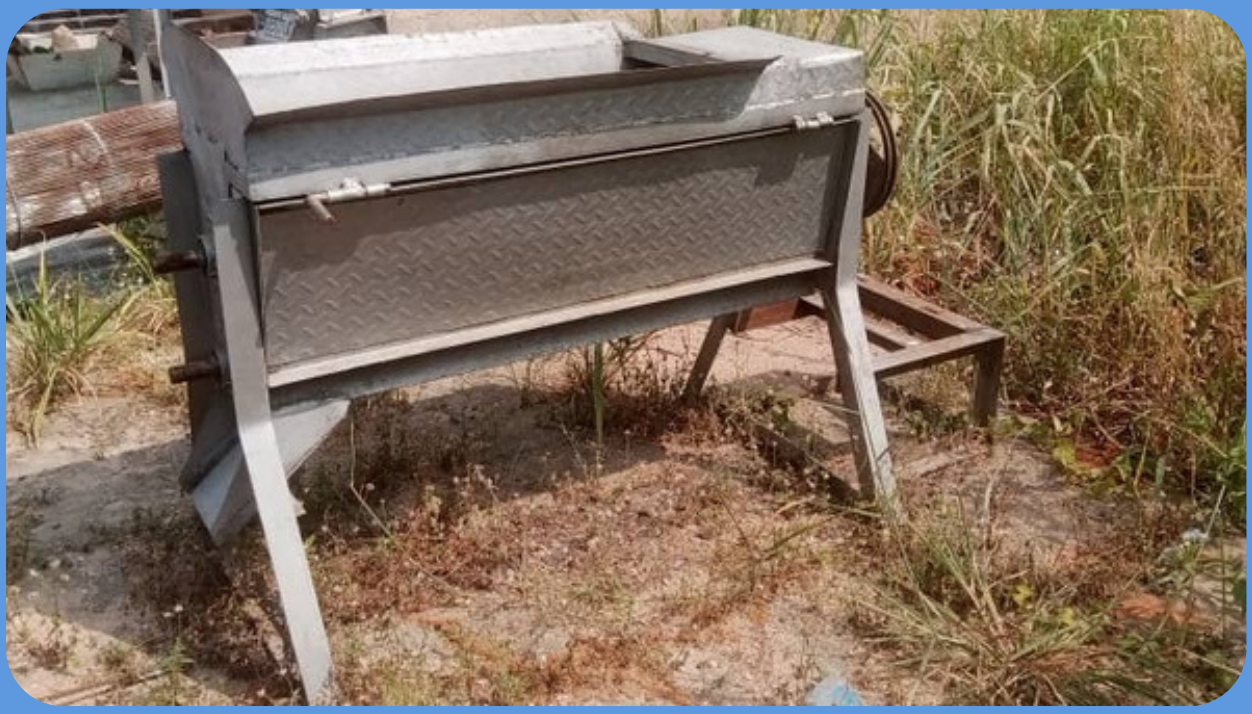


Research Title: Design & Fabrication of Spy Jet

Brief Description

This piece of machinery is meant to be used specifically to transmit information. It is also meant to be used in the case war fly into into the enemies zones do what ever thing it might be programmed to do and as well collect information of the positioning of the enemies. It can in stay for an upward of 60minutes.

Department: Mechanical Engineering Department
Principle Researcher: Engr. Dr. Adikwanduaba Sylves
Co-researcher(s): Engr. John clever, Ikenna Okpara Oko
Sponsor: Tetfund

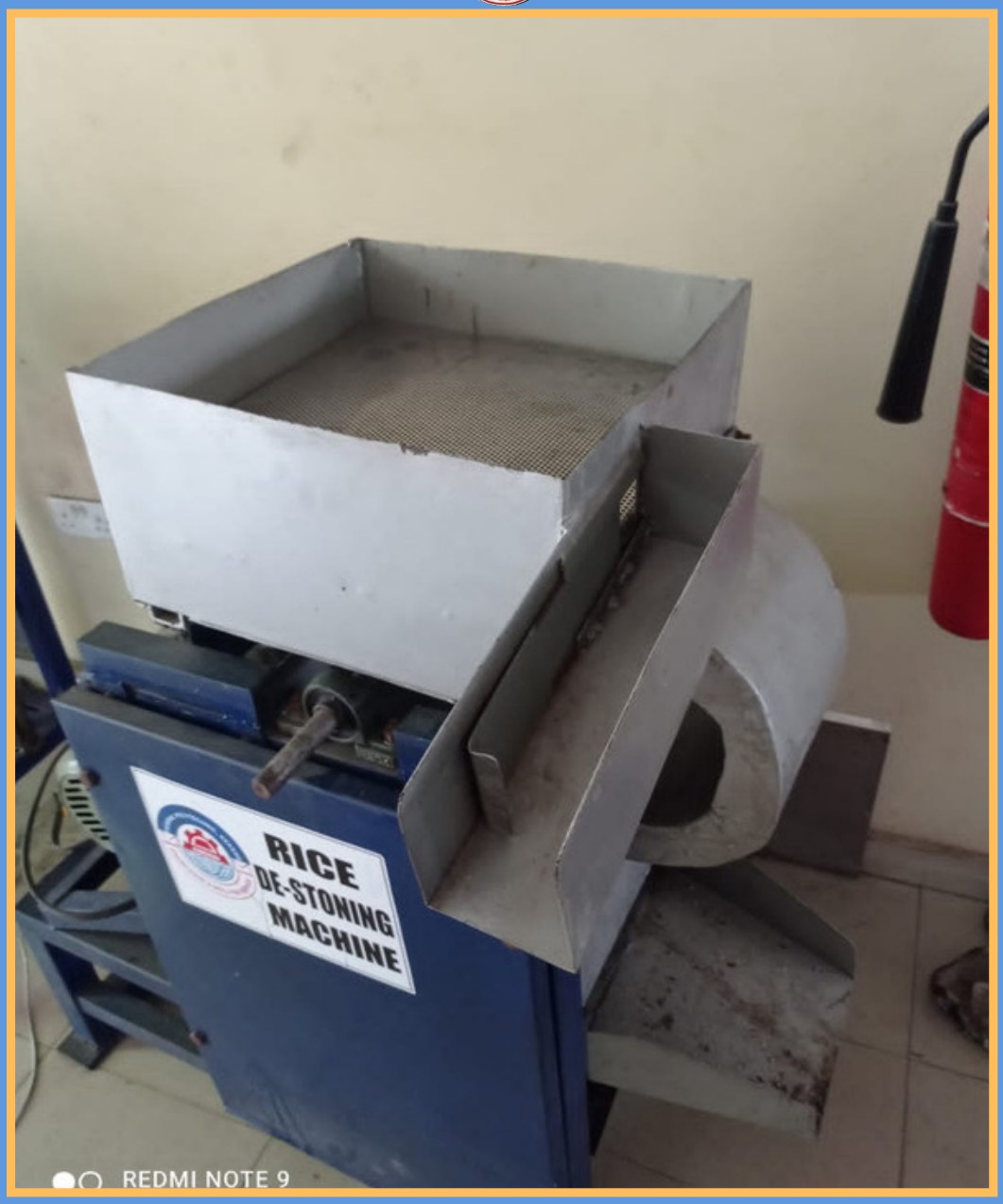


Research Title: Design and Fabrication of Fiber Separator Machine.

Brief Description

This piece of machinery one of the semi mechanized agro processing machinery is fabricated using fabricated mild steel plates and rods of 2inches thickness . it is specifically designed to separate the palm fruits fibers from the kernel nuts. Thus, making it easy to squeeze out oil from the digested palm fruit.

Department: Mechanical Engineering Department
Principle Researcher: Engr. Dr. Adikwanduaba Sylves
Co-researcher(s): Engr. John Clever, Ikenna Okpara Oko
Sponsor: Tetfund



Research Title:Design and Fabrication of Rice De-Stoning Machine

Brief Description

This is a portable agro-mechanical equipment designed and produced to assist the local rice farmer to be able to remove stones from his rice harvests the vibration of the properly placed sieves ensure that stones are separated from the rice and collected at a point separate from the point of collection of the rice grains.

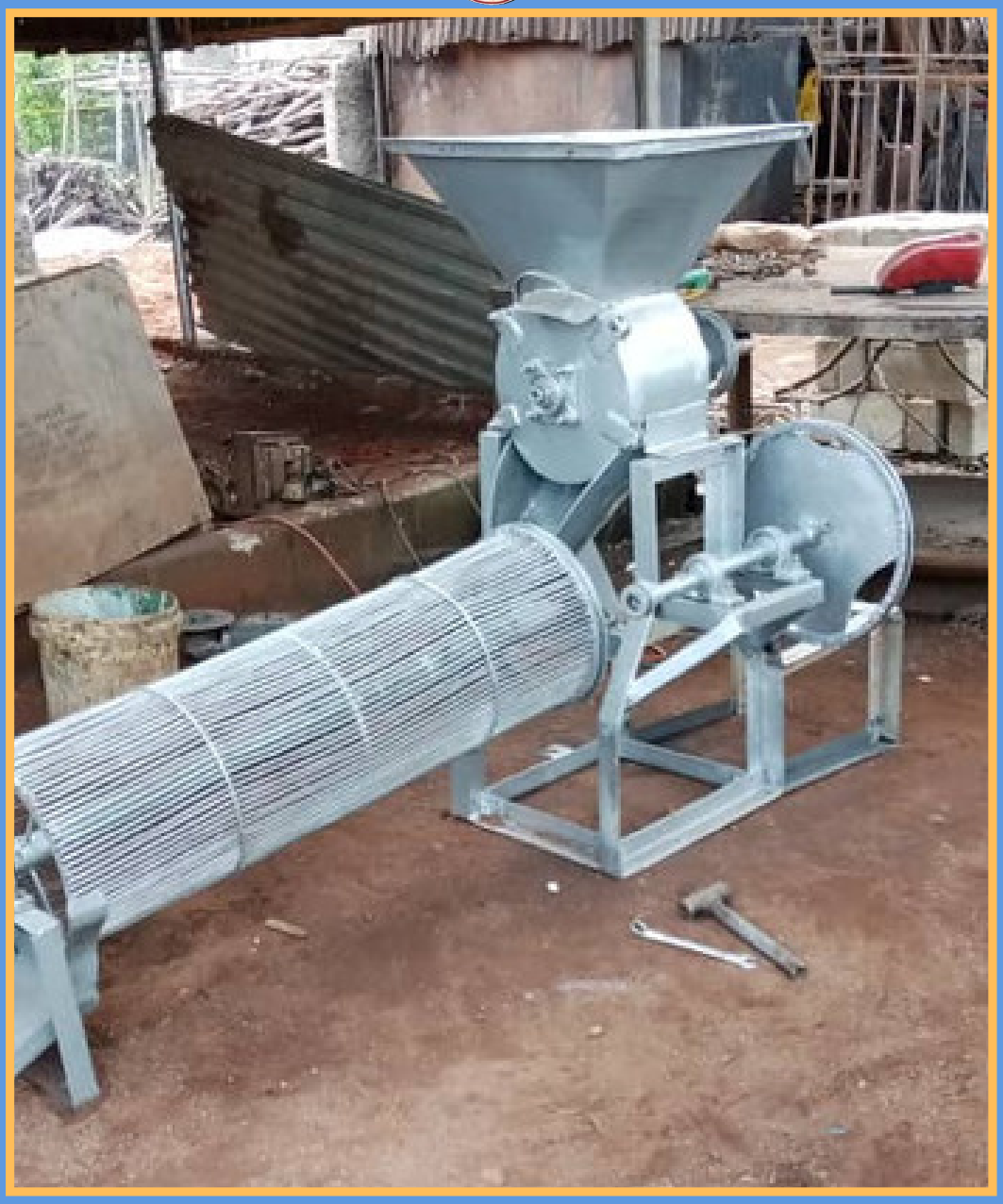
Department: Mechanical Engineering Department
Principle Researcher: Engr. Pius Chinedu Nwosu
Co-researcher(s): Engr. Samuel Ikegbula
Sponsor: Tetfund

Research Title: Design & Fabrication of a Coconut De-husking Machine

Brief Description

This is an agro-mechanical equipment designed and produced to quicken the processing of coconut. The installed spikes help to safely and quickly remove the husks of the coconut. This replaces the traditional and crude use of machete to remove the coconut husks, thereby removing the high risk of machete cuts

Department: Mechanical Engineering Department
Principle Researcher: Engr. Pius Chinedu Nwosu
Co-researcher(s): Engr. Samuel Ikegbula
Sponsor: Tetfund

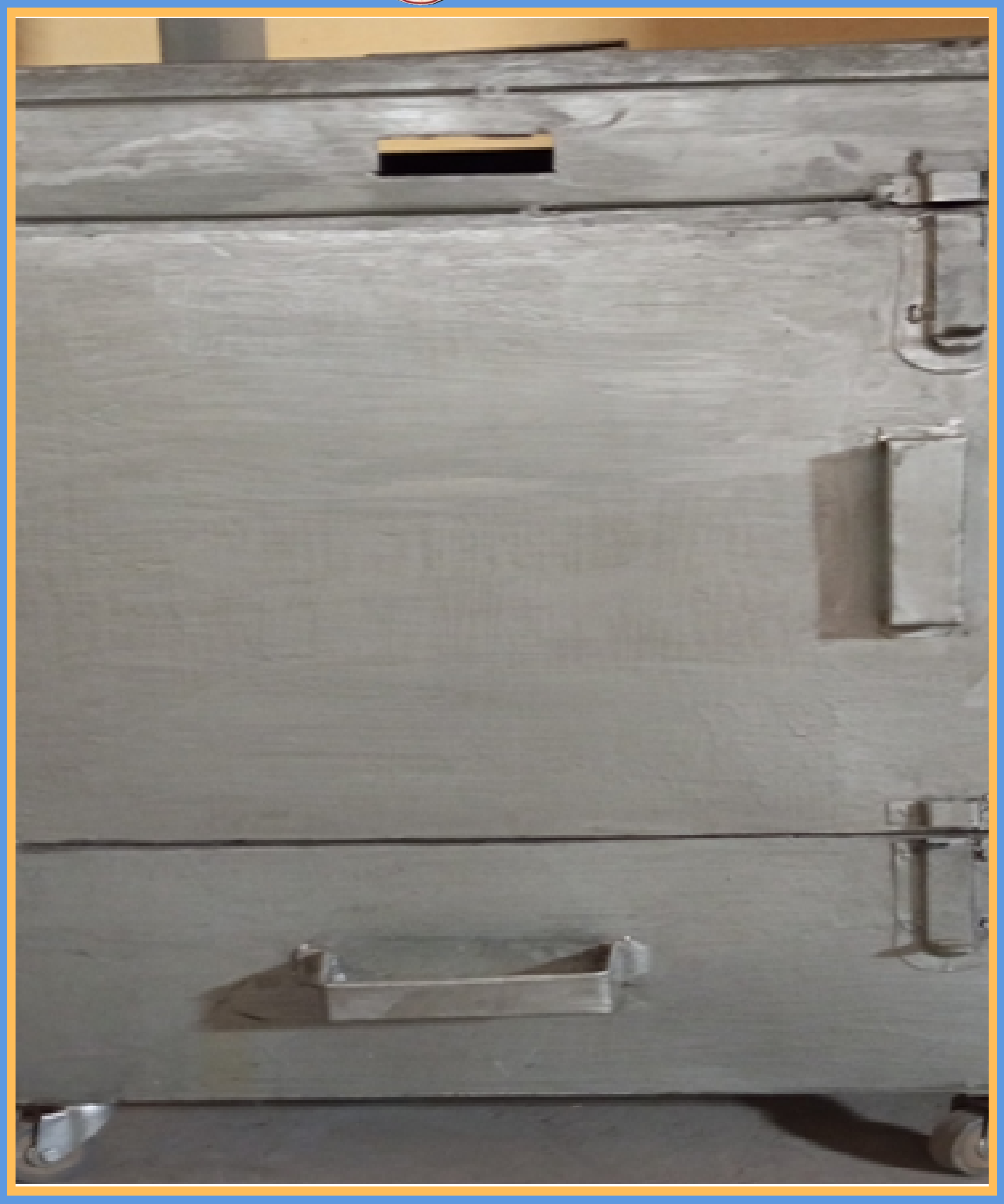


Research Title: Design & Fabrication of Kernel cracking and separating machine

Brief Description

This piece of machinery is fabricated by the use of mild steel. It consists of a transmitting unit, a cracking chamber and a product separating unit, made of steel basket. It is used for kernel cracking and separation. It can produce over 2000kg weight of kernel in one hour.

Department: Mechanical Engineering Department
Principle Researcher: Engr. Dr. Adikwanduaba Sylves
Co-researcher(s): Engr. Gerald Emeh, Adi Kelechi
Sponsor: Tetfund



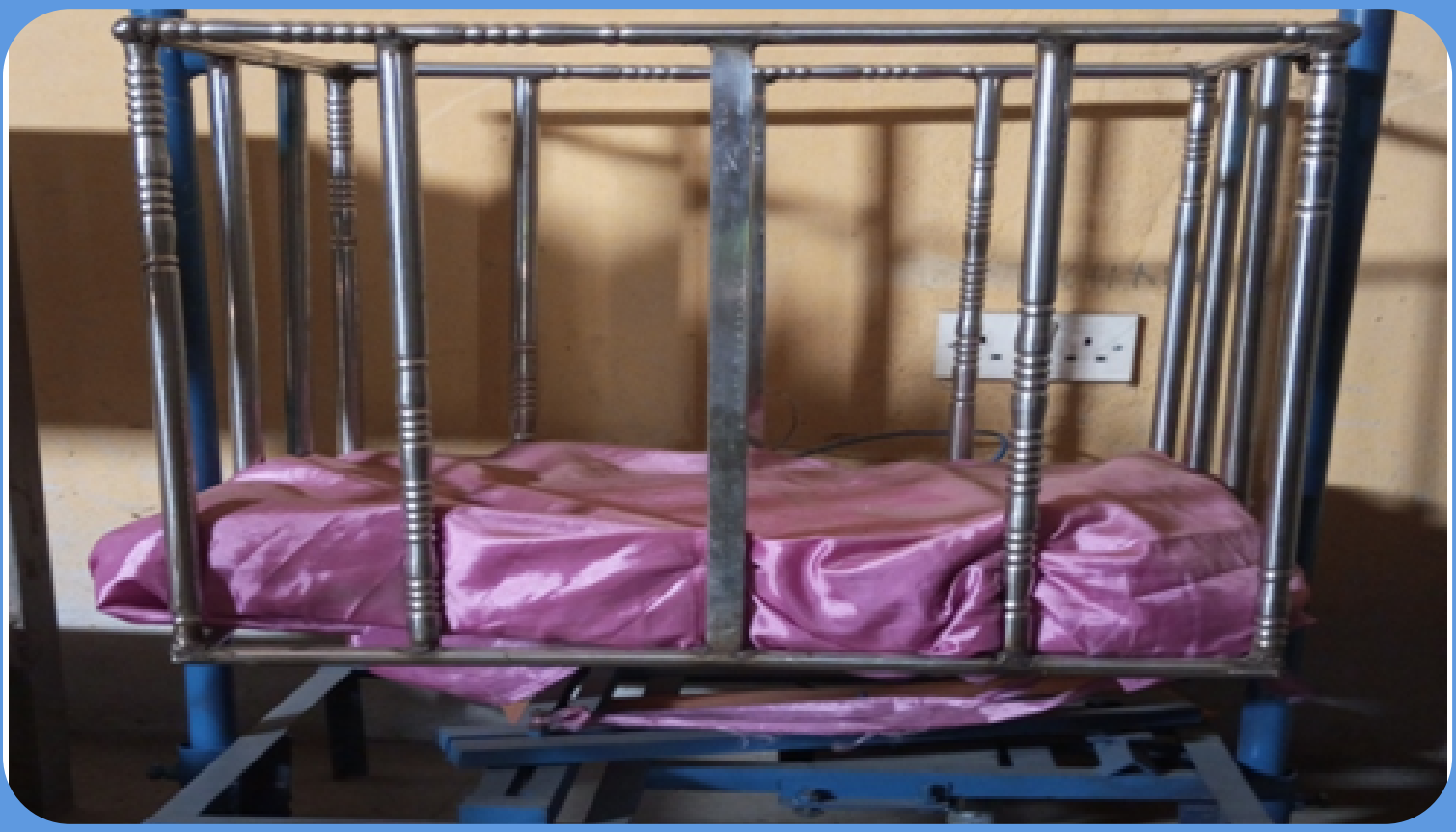
Research Title: Design & Fabrication of Dual Powered Oven (Electric/ Charcoal)

Brief Description

This is a baking oven meant to be powered by dual methods- It can be electrically power when there is power and can be powe4ed using charcoal when there is no power. Materials use in building it were carefully selected bearing in mind that heat from charcoal will have a direct contact with it.

It is portable and can easily be transported around.

Department: Mechanical Engineering Department
Principle Researcher: Engr. Dipnap Gaven V.
Sponsor: Tetfund



Research Title: Design and Fabrication of a Baby Rocker

Brief Description
This equipment is a baby cradle and rocker built for comfort of babies in the house. It is like cozy bed for the baby and rocks the baby to and fro making the baby feel relaxed and comfortable.

It was built with finest of materials bearing in mind that the main interests are beauty and comfort.

Department: Mechanical Engineering Department
Principle Researcher: Engr. Dipnap Gaven V.
Sponsor: Tetfund

Research Title: Manual Seed Planting Machine

Brief Description

This is a manually operated machine that is used for planting of seeds in the farm. It is useful for planting of seeds at regular intervals such that the seeds are equally spaced and also with same number of seeds per stand.There was a careful selection of materials for this, bearing in mind that it will be an out-door equipment.

Department: Mechanical Engineering Department
Principle Researcher: Engr. Ugwuagbu Duke
Sponsor: Tetfund

Research Title: Dual Melon Shelling Machine

Brief Description

This machinery was built to be used to shell dry melon. It is an agro processing machine that removes the shell from the melon making it easy to produce ready-to-use melon in very large quantities.

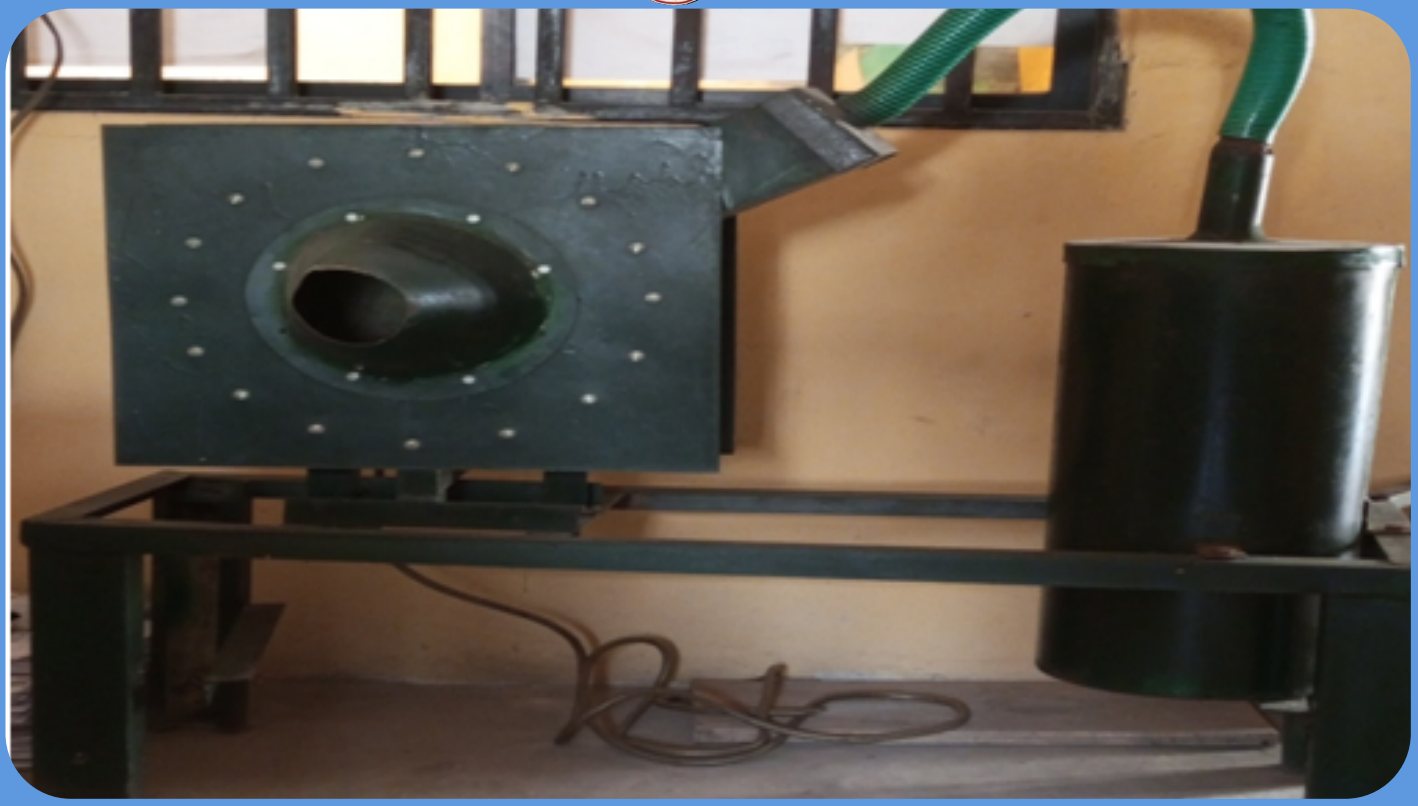
It is an indoor/outdoor mobile equipment and because of that care was taken in selection of materials for it.

Department: Mechanical Engineering Department
Principle Researcher: Engr. Ugwuagbu Duke
Sponsor: Tetfund

Research Title: Briquetting Machine

Brief Description
This machine is used in forming briquettes. Most of the parts are made of mild steel except for the impact hammers that is made of hardened steel. It also has springs that are treated steel and a one (1) horse power prime mover

Department: Mechanical Engineering Department
Principle Researcher: Engr. Ugwuagbu Duke
Sponsor: Tetfund



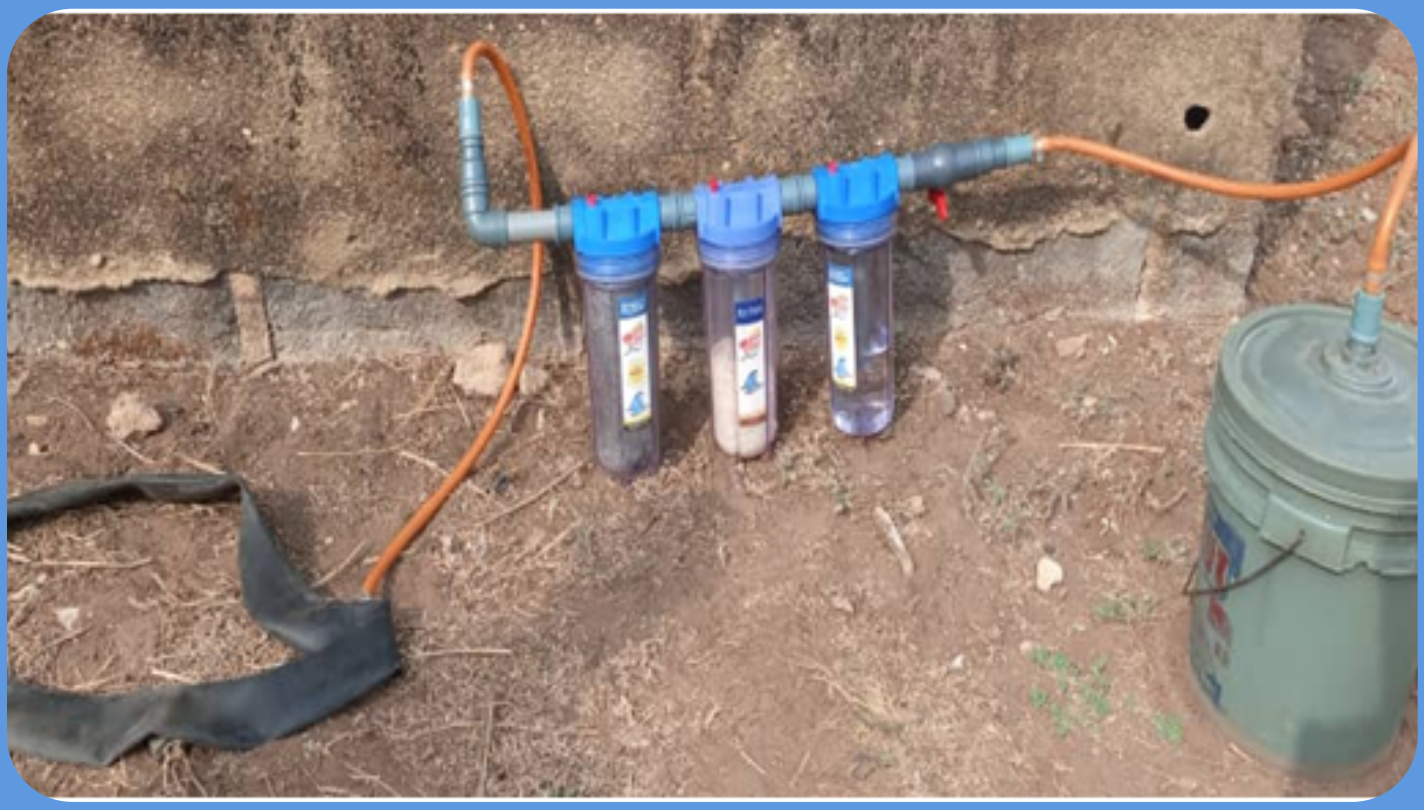
Research Title: Design and fabrication of Dust Extractor

Brief Description

The dust extractor is a machine that is very useful in laden environments, like saw mill, grain mills, generator rooms and quarry sites. The machine is powered by a one (1) horse power electric motor that rotates in conter direction so that dusk laden air is taken in through the dusk capture hood to the cyclone where it settles as particles.

This machine is always an integral part of silos and grain mills, making it an out-door equipment. Material selection was therefore done bearing this in mind

Department: Mechanical Engineering Department
Principle Researcher: Engr. Azodoh Kingsley
Sponsor: Tetfund



Research Title: Design and Fabrication of Bio Gas Scrubber

Brief Description

Biogas however produced is always accompanied by impurities which reduces the performance of the gas, should it be use like that . This equipment is therefore, aimed at removing the impurities in the gas so that its output can be maximally utilized

The gas produced from the digester is passed through the equipment causing it to be cleaned, in the three layers and coming out 95% pure.

Department: Mechanical Engineering Department
Principle Researcher: Engr. Nkwor Chimezie A.
Sponsor: Tetfund