

## **Design And Fabrication Of Process Vehicle for Agriculture**

### **Abstract**

Agriculture plays an important role in the life of economy. It is the backbone of our economy system. In this project work focused on seed sowing processes and tried to solve the problem. Presently, small land holding farmers use work bulls mostly for land preparation

Ploughs, ridges, seeders and sprayer are all seasonal implements.

The cost price of imported planters has gone beyond the purchasing power of most of our farmers.

This project work is focused on the design and fabrication of multipurpose equipment which is used for land preparation, sowing, fertilizing and leveling process.

# **DESIGN AND FABRICATION OF PLATFORM ASSIST FOR DISABLED PERSON**

## Abstract

The project's aim is to create a mechanism that will facilitate the transportation of people with disabilities (students and teachers) in a railway platform. This will encourage the integration of disabled people in the community and will also consist a technical challenge for the designers. Practically the project has two main parts: researching the field to find all the necessary information and data related to such a mechanism, and the second part being the actual design of the mechanism.

We analyzed the strengths and weaknesses, the parts we should insist on, creating a model of the most important issues that are primary for the project. This analysis was made from two points of view, from the passenger's point of view and from potential customer's point of view, that may be interested in fabricate our product. The set of IR sensors are placed on the track to detect the Train movement. The sensed data is processed in the microcontroller and accordingly it controls the rotation of the DC geared Motor.

# **DESIGN AND FABRICATION OF AGRICULTURAL RECIPROCATING MULTI SPRAYER**

## **ABSTRACT**

In agricultural sector generally farmer uses traditional way that is spray carried on backpack and spraying crop. This becomes time consuming, costly and human fatigue is major concern, these problems can be overcome by using agricultural reciprocating multi sprayer. It facilitates uniform spread of the chemicals, capable of throwing chemicals at the desired level, precision made nozzle tip for adjustable stream and capable of throwing foggy spray depending on requirement. In our project we use slider crank mechanism to convert rotary motion into reciprocating motion to operate the pump, thus the pesticide is spread through the nozzle. This work gives continuously flow of pesticide at required pressure and height. A special arrangement is implemented in this project to adjust the pressure as high or low. We also use a weed cutter in our model for removing unwanted plants. By using agricultural sprayer, spraying time and weeding time, human efforts reduces and results in cost reduction

## **Design and Fabrication of Automatic reciprocating cutter**

The objective of this work is to automate the conventional power hacksaw machine in order to achieve high productivity of work-pieces than the power hacksaw machine using pneumatic power. Pneumatic is a huge topic of science and engineering dealing with the mechanical properties of air. Pneumatic Operated Double Hacksaw mechanical project is low cost project.

In our project we take this pneumatic and a hacksaw for cutting purpose, The pneumatic reciprocating high-speed hacksaw machine has an advantage of working in high pressure , the hacksaw used in this is reciprocate such that required shape can be cut according to the requirement. The hacksaw is the metal cutting machine tool designed to cut metal by applying pneumatic pressure. Hacksaws are used to cut thin and soft metals the operation of the unit is simplified to a few simple operations involving a cylinder block and piston arrangement. There are numerous systems in hacksaw machine.

## **DESIGN AND FABRICATION OF INDUSTRIAL VERSATILE MACHINE**

### Abstract

This project work deals with the “ **DESIGN AND FABRICATION OF INDUSTRIAL VERSATILE MACHINE**””. Multi-operation machine as a research area is motivated by questions that arise in industrial manufacturing, production planning, and computer control.

Consider a large automotive garage with specialized shops. In This Project the following work to be carried out like Drilling, Slotting, Hacksaw Cutting in the mechanism of Bevel Gear, Scotch Yoke and Crank Link Mechanism respectively.

These three tasks may be carried out in any order. However, it is impossible to perform two tasks for a industrial simultaneously. When there are many industrial requiring services at the three shops, it is desirable to construct a service schedule that takes the least amount of total time.



## **Design & Fabrication of Versatile Machines for DTP Centre**

### **ABSTRACT**

This project work deals with the “ **DESIGN & FABRICATION OF VERSATILE MACHINES FOR DTP CENTRE.**”. This paper presents the concept of Multi-Function Operating Machine mainly carried out for DTP. DTP Today in this world every task have been made quicker and fast due to technology advancement but this advancement also demands huge investments and expenditure, every industry desires to make high productivity rate maintaining the quality and standard of the product at low average cost. We have developed a conceptual model of a machine which would be capable of performing different operation simultaneously, and it should be economically efficient. This model are conservation of electricity (power supply), reduction in cost associated with power usage, increase in productivity, reduced floor space

Consider a for DTP(Desk Top Publishing) with specialized shops. A DTP may require the following work like as **STAPLE, PUNCHING, PRESSING(Binding) AND CUTTING (SCISSOR)**. These four tasks may be carried out in any order. However, since cutting and punching are in different rooms , it is impossible to perform two tasks for a DTP centre's simultaneously. When there are many DTP centre requiring these services at the four rooms, it is desirable to construct a service schedule that takes the least amount of total time.

## **Design and Fabrication of automatic punching and feeding using Geneva mechanism**

### **ABSTRACT**

In this auto roll punching machine consists of two sections. One section is automatic metal sheet feeding mechanism and the second section is conversion of rotary motion into linear reciprocating motion of punching tool. The first section consists of Geneva wheel disc keyed with a shaft at one end and the other end is connected with chain sprocket wheel. This Geneva wheel shaft is supported on two plummer block bearings. This sprocket wheel transmits the rotary motion from the Geneva wheel to the metal sheet feeding rollers through a chain drive. Hence when the Geneva wheel is rotated, the metal sheet also moves for punching operation.

## **Design and Prototype Development of Portable Trash Collector Boat**

### **Abstract:**

Commercially available trash collector boats are often designed in large size to cater to the high trash loading for surface water cleaning purpose. On the other hand, for small streams and drainage, the manual cleaning method is often used. This situation is undesirable since it can lead to health problem and diseases to the operator due to the number of impurities present in the water. This paper highlights a proposed design of a trash collecting boat for cleaning purposes in small area applications such as lakes, small streams and drainage. The trash collector boat is designed to be a small and automated boat capable of collecting floating solids off the water surface and store them temporarily. The trash will be manually collected at the end of the operation. The design methodology has been accomplished using engineering design method to propose a suitable design of portable trash collector boat based on commercially available design. System fabrication will be conducted using appropriate material to ensure the efficiency of trash collector boat.



# **DESIGN AND FABRICATION OF HEAD LIGHT WITH STEERING and DIM/BRIGHT CONTROLLER**

## **ABSTRACT**

Special safety features have been built into cars for years, some for the safety of car's occupants only, and some for the safety of others. One of the choices available is Design and fabrication of steering controlled head light system. Car safety is the avoidance of automobile accidents or the minimization of harmful effects of accidents, in particular as pertaining to human life and health. Still, more specially, this device relates to a headlight arrangement operably connected to the steering and front wheel assembly of and automobile operably to maintain headlight members and the front wheels pointed in the same direction at all times.

Car safety is the avoidance of automobile accidents or the minimization of harmful effects of accidents, in particular as pertaining to human. Special safety features have been built into cars for year, some for the safety of car's occupants only and some for the safety of other. We have pleasure in introducing our new project **"AUTOMATIC HEAD LIGHT DIM/BRIGHT CONTROLLER"**, Which is fully equipped by sensors circuit and dim/bright light it is a genuine project which is fully equipped and designed for automobile vehicles.

This forms an integral part of best quality. This product underwent strenuous test in our automobile vehicles and it is good. Man as needed and used energy at an increasing rate.

# **Design and fabrication of Vehicle Accident Prevention Using eye Blink Sensor**

## **Abstract:**

Now a day's accidents are increasing at a large pace, and various technologies are being introduced to reduce the accidents. In this project we provide means of accident prevention using eye blink wherein the vehicle is stopped immediately and intimated wherever needed.

In this project we have two sections. One is transmitter section which is located in the vehicle and another one is Receiver section located in remote place (Police station, near ones, etc). In the transmitter section the eye blink sensor is placed near the eye to sense the blink count and this information is transmitted in the form of pulses and is given to the Microcontroller. The Microcontroller uses this information to compare with the normal eye blink programmed in the chip and if any abnormal situation arises the vehicle is stopped with an alarm indication, this operation is enabled by means of the driver circuit connected to the vehicle motor and the signal is transmitted via RF-transmitter.

In the Receiver side the transmitted signal is received and the signal is decoded and given to the Microcontroller attached with buzzer alert is given.

## **DESIGN AND FABRICATION OF AUTO FEED PNEUMATIC SHEET METAL CUTTING MACHINE**

### Objective:

To design and fabricate pneumatic based sheet metal cutting machine to be used for the cut the sheet metal of minimum thickness without manual hard work instead we use pneumatic control system to operate the cutting machine accurately. This machine can also be installed in the lab for the experiment and demonstration to engineering students. Thereby gaining the hand sum experience and knowledge on how to design and fabricate the mechanical system.

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## **Design and fabrication of sheet metal coin punching machine with auto feed**

### **ABSTRACT**

In this auto roll **sheet metal coin punching machine** consists of two sections. One sections is automatic metal sheet feeding mechanism and the second section is conversion of rotary motion into linear reciprocating motion of punching tool . The first section consists of geneva wheel disc keyed with a shaft at one end and the other end is connected with chain sprocket wheel. This geneva wheel shaft is supported on two plummer block bearings. This sprocket wheel transmit the rotary motion from the geneva wheel to the metal sheet feeding rollers through a chain drive. Hence when the geneva wheel is rotated , the metal sheet also moved for punching operation.

# **DESIGN AND FABRICATION OF AUTOMATIC BOTTLE FILLING USING GENEVA MECHANISM**

## **Abstract:**

This project was discussed about the design and implementation of automated multiple water filling machine using Geneva mechanism. Generally, the function of the machine is to fill the water automatically into bottles through a moving bottle plate. This project is the combination of Geneva and electrical synchronous motor system. This project is divided into four sections, the loading section, the bottle plate section and filling section, where the whole sections is controlled by Geneva. The entire system is more flexible and time saving.

# **DESIGN AND FABRICATION OF Automatic packing conveyor using Geneva mechanism**

## **ABSTRACT**

The Geneva mechanism is a gear mechanism that translates a continuous rotation into an intermittent rotary motion. The rotating drive wheel has a pin that reaches into a slot of the driven wheel advancing it by one step. The drive wheel also has a raised circular blocking disc that locks the driven wheel in position between steps. Geneva mechanism has many applications such as in watches, projector, etc. But we used Geneva mechanism for converting rotary motion into an intermittent motion in production line. Geneva mechanism can be used in material handling in an industry. The proposed concept will help in production line where many workers are used for the material handling purpose it also reduce the cost and threshing time requirement of more number of worker will be completely eliminated as only two workers can carried out the complete operation. Generally a belt conveyor consists of a motor to drive the rollers and in our project a handle is attached to driving wheel. By using hand we operate the driving wheel.

# **Design And Fabrication of automatic bottle filling by scotch yoke mechanism using chain drive**

Abstract –

Liquid filling machine is used in beverage and bottling industries. Some of the filling machine is commercialized as water vending machine where by Reverse Osmosis water can be brought from by using money. The machine found in the market is high in price, requires complex changes in hardware and program configuration if varied liquid volume is required to be filled and most of the time; it is not fully automatic. The purpose of this project is to develop an automatic liquid filling machine. Microcontroller is used as the controller to control the automatic operation of this machine where the machine consists of conveyor system and filling stations. Microcontroller is selected as the controller because it is easier to learn and the compact size makes it easier to attach it with the system. The automatic liquid filling machine is developed to be lower in price compare to the other filling machines in the market. The machine is also easy to operate and user friendly, where simple steps are needed to operate the machine. The machine controller is also portable and can be attached with conveyor system or can be left standalone.

# DESIGN AND FABRICATION OF MANUAL CONCRETE BLOCK MAKING MACHINE

## Abstract –

This project report deals with the design and development of an improved hollow concrete block making machine. The machine lays a particular number of blocks over the platform and moves further to lay another set of blocks, so as to cover the casting platform, in a continuous casting process. This study attempts to solve the problems encountered on the existing hollow concrete block making machine by improving the design of basic components, increasing production rate and minimizing damages of uncured blocks during transfer. The design is based on data from literature review about Concrete in building construction, Concrete block machine developmental stage, how concrete block making machine works and manual calculation. To meet the objective based on the design principles several component mechanisms are improved.



## **DESIGN AND FABRICATION OF MANUAL ROLLER BENDING MACHINE USING SCISSOR JACK**

### **Abstract:**

The aim of this paper is to develop a roller bending machine which is useful to bend a metal strips in workshop. This project is to design and construct a portable roller bending machine. This machine is used to bend metal strips into curve and the other curvature shapes. The size of machine is very convenient for portable work. It is fully made by steel. Moreover, it is easy to be carry and use at any time and any place. It reduces human effort and also required less skill to operate this machine. We are designing manually operated roller bending machine with use of rollers, chain sprockets and support (frame). The roller bending machine is manually operated. Therefore, our objective is to increase accuracy at low prize without affecting the bending productivity. This machine works on simple kinematic system instead of complicated design. Due to its portability, it can be used by small workshop or fabrication shop. Bending machine is a common tool in machine shop that is used to bend a metal.

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We analyzed the strengths and weaknesses, the parts we should insist on, creating a model of the most important issues that are primary for the project. This analysis was made from two points of view, from the passenger's point of view and from potential customer's point of view, that may be interested in fabricate our product. The set of IR sensors are placed on the track to detect the Train movement. The sensed data is processed in the microcontroller and accordingly it controls the rotation of the DC geared Motor.

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## **FABRICATION OF PNEUMATIC DRILL JIG**

### **ABSTRACT:**

This project work deals with the Design And Fabrication Of Pneumatic Drill Jig. This Pneumatic Drill Jig shows reduction in the labor time, machining time, etc. This type of Jig is used for mass production for motor cover, bearing cap and other mechanical and automobile equipment's. This pneumatic drill jig is provided with pneumatic clamping arrangement. This type of clamping arrangement saves the setting time, marking time, punching time etc. When compressed air is taken from a convenient medium to provide proper clamping force and good gripping to the component. As the quantity to produce is large the proposed pneumatic drill jig fulfills the mass production requirement in the shop. Clamping can be done by releasing the pressured air using valves.

# **Design and Prototype Development of Portable Trash Collector Boat**

## **Abstract:**

Commercially available trash collector boats are often designed in large size to cater to the high trash loading for surface water cleaning purpose. On the other hand, for small streams and drainage, the manual cleaning method is often used. This situation is undesirable since it can lead to health problem and diseases to the operator due to the number of impurities present in the water. This paper highlights a proposed design of a trash collecting boat for cleaning purposes in small area applications such as lakes, small streams and drainage. The trash collector boat is designed to be a small and automated boat capable of collecting floating solids off the water surface and store them temporarily. The trash will be manually collected at the end of the operation. The design methodology has been accomplished using engineering design method to propose a suitable design of portable trash collector boat based on commercially available design. With the aid of CATIA, a 3D representation of the trash collector boat was generated to visualize all the details regarding the trash collector boat. System fabrication will be conducted using appropriate material to ensure the efficiency of trash collector boat.

***DESIGN AND FABRICATION OF MECHANICAL FORK LIFT USING  
REDUCTION GEAR MECHANISM***

The main objective in the project which we are going to implement the reduction gear mechanism to lift up the object with lower speed.

The forklift is operated by using motorized screw jack.

To lower the speed and increase the torque we are using cluster gear mechanism.

Now a days there are several types of fork lifts are used to handling heavy materials like containers, trolley.

# Design and fabrication of Gearless power Transmission Mechanism using skew shaft

## ABSTRACT:

Gearless transmission mechanism transmits power from input to output shafts by means of sliding links that form revolute pair with the hub. Links bent at required angle slide inside the holes in the hub. Thus, as the holes in input hub rotate; it pushes the links and in turn output hub is rotated. This mechanism can be used as a replacement for bevel gears in low cost, low torque applications. It can transmit at any angle 0 to  $180^{\circ}$ . In this paper the mechanism is studied and a possible go-kart transmission layout is fabricated and few future applications are suggested.

# **DESIGN AND FABRICATION OF A SELF-CLOSING SAVONIUS WIND TURBINE**

## **ABSTRACT**

- ❖ The main objective of this project is to generating power from renewable wind energy. The aim of this project is to avoid the blade damages causes while in over speed of air/wind forced like twister.
- ❖ Modern wind power machines are used for generating electricity and are more commonly called wind turbines. Wind power is the conversion of wind energy into a useful form of energy, such as using wind turbines to make electric, windmills for mechanical power, wind pumps for pumping water or drainage, or sails to propel ships.
- ❖ The main advantages of wind energy by comparing other modes of power sources in environmentally, it reduces carbon dioxide, along with other greenhouse gas emissions, which contributes to counter measuring climate change and also, it does not contribute to any loss to water circulation in eco-systems. Wind power does not generate solid nor gaseous polluting waste.
- ❖ Socially and economically, the cost of wind energy is stable, since it is not affected by fuel market price fluctuations. Wind power, comparing to other energy sources, provides the best guarantee of preserving natural rural landscape. Wind turbines occupy little amount of space and may easily coexist with agriculture.



# **DESIGN AND FABRICATION OF HEAD LIGHT WITH STEERING and DIM/BRIGHT CONTROLLER**

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Special safety features have been built into cars for years, some for the safety of car's occupants only, and some for the safety of others. One of the choices available is Design and fabrication of steering controlled head light system. Car safety is the avoidance of automobile accidents or the minimization of harmful effects of accidents, in particular as pertaining to human life and health. Still, more specially, this device relates to a headlight arrangement operably connected to the steering and front wheel assembly of and automobile operably to maintain headlight members and the front wheels pointed in the same direction at all times.

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This forms an integral part of best quality. This product underwent strenuous test in our automobile vehicles and it is good. Man as needed and used energy at an increasing rate.

# **Design and fabrication of LOWCOST PNEUMATIC BIKE**

## **ABSTRACT**

This project is design, fabrication and development of a design and fabrication of pneumatic bicycle it is rear wheel drive. The conceptual design of this model is taken from manually operated bicycle. The complete body looks like a bicycle in which manual operation followed .this product is a pneumatic vehicle, useful for handicapped people, and also normal persons. The power transmission takes place from rear wheel through chain drive. The entire arrangement of power transmission by means of connecting rod of the actuator is taken along with the chain sprocket. When the cylinder is connected to, it would give a driving force due the pressure at which air is sent. Only one person is allowed on the bicycle at any time. The material, mild steel is choose as a main structure fastening by joint, and main components of this project is , air cylinder, solenoid valve, electrical control unit, pneumatic actuator, power transmitting chain, sprocket wheel, two wheeler rear wheel components of model attach by welding, part by part create then be fabricating together. At the end of the project, the model is tested by several people and their comment then being recorded and performed some tests. The concept of compressed air bicycle in practice reduces the air pollution to large extend as its exhaust is nothing but air.

## **Automatic tyre pressure inflation and Bumper system with Jack**

### **Abstract**

Project is concerned about and to develop an “**Automatic tyre pressure inflation and Bumper system with Jack**”. As we are aware that by drop of few pressure units in vehicle its results in the reduction in mileage, tyre life, safety and performance.

This system can be placed in every in automobile under any operating condition, this will not only maintain the correct tyre pressure but also increase tyre life, mileage and safety so we have fabricated this system to inflate and deflate the tyre automatically by using control units. This system is named automatic because it checks the tyre pressure continuously using built control device to the driver about the tyre condition.

In this Project, The design and develop a control system based intelligent electronically controlled automotive bumper activation Before Collision and Pneumatic Jack also placed for lifting the axle to change the tyre after punchier.

# **Design and fabrication of Vehicle Accident Prevention Using eye Blink Sensor**

## **Abstract:**

Now a day's accidents are increasing at a large pace, and various technologies are being introduced to reduce the accidents. In this project we provide means of accident prevention using eye blink wherein the vehicle is stopped immediately and intimated wherever needed.

In this project we have two sections. One is transmitter section which is located in the vehicle and another one is Receiver section located in remote place (Police station, near ones, etc). In the transmitter section the eye blink sensor is placed near the eye to sense the blink count and this information is transmitted in the form of pulses and is given to the Microcontroller. The Microcontroller uses this information to compare with the normal eye blink programmed in the chip and if any abnormal situation arises the vehicle is stopped with an alarm indication, this operation is enabled by means of the driver circuit connected to the vehicle motor and the signal is transmitted via RF-transmitter.

In the Receiver side the transmitted signal is received and the signal is decoded and given to the Microcontroller attached with buzzer alert is given.

# **AUTOMATIC GEAR TRANSMISSION IN TWO WHEELERS USING EMBEDDED SYSTEM**

## **Abstract**

In this study, a gear shifting mechanism was designed and applied on an auto clutch featured bike to make the gear transmission process faster and less destructible for the driver using Embedded System design. The present automatic transmission is fully mechanically controlled and costs very high and it is not suitable for small displacement engines. But the gear transmission mechanism designed makes driving easier and to achieve efficient driving. This new device must be reliable, has small dimensions, economical and low maintenance cost. This project aims to improve the gear shifting process with a suitable control mechanism to implement in clutch featured bikes. According to the suggested gear shifting method, the microcontroller selects the transmission gear as per the speed of the vehicle without any human interference. The head light control is designed which dims and dips if any vehicles comes opposite with high beam. This is a safety feature installed to avoid accidents caused due to high beam lights having blinding effect on drivers coming from the opposite direction.

## **Design and fabrication of Automatic Pneumatic Bumper and Break Actuation Before Collision**

### **ABSTRACT:**

The technology of pneumatics has gained tremendous importance in the field of workplace rationalization and automation from old-fashioned timber works and coal mines to modern machine shops and space robots. It is therefore important that technicians and engineers should have a good knowledge of pneumatic system, air operated valves and accessories. The aim is to design and develop a control system based intelligent electronically controlled automotive bumper activation and automatic braking system is called “Automatic Pneumatic Bumper And Break Actuation Before Collision”. This system is consists of IR transmitter and Receiver circuit, Control Unit, Pneumatic bumper system and pneumatic braking system. The IR sensor is used to detect the obstacle. There is any obstacle closer to the vehicle (with in 3-4 feet), the control signal is given to the bumper activation system and also pneumatic braking system simultaneously. The pneumatic bumper and braking system is used to product the man and vehicle. This bumper and braking activation system is only activated the vehicle speed above 30-40 km per hour. This vehicle speed is sensed by the proximity sensor and this signal is given to the control unit and pneumatic bumper and braking activation system.

# **Design and fabrication of abrasive belt grinding wheel.**

## **SYNOPSIS**

The Machine we designed and fabricated is used for grinding any shape of object like Circular, Rectangular, and Polygon. In our project the work abrasive belt is used to grinding the material. The abrasive belt is rotated by the single phase induction motor. Hence our project namely abrasive belt grinder is a Special type of Machine. According to the type of material to be grind, the grinding tool can be changed.

This project gives details of grinding various shapes and sizes of components. This machine can be widely applied in almost all type of industries. By varying the pulley sizes I can get a high end speed of over 10,000 rpm if needed. The only change I would make is to have a totally enclosed motor to keep out the grit.

# **Design & fabrication of two operational machine for industries using scotch yoke mechanism**

## **SYNOPSIS**

Multi-operation machine as a research area is motivated by questions that arise in industrial manufacturing, production planning, and computer control. Consider a large automotive garage with specialized shops. A industrial may require the following work, **CUTTING** and punching . These four tasks may be carried out in any order.however, since **CUTTING** and punching are in different buildings, itis impossible to perform two tasks for a industrial simultaneously. When there are many industrial requiring services at the two shops, it is desirable to construct a service schedule that takesthe least amount of total time



## **Design and fabrication of portable oil skimmer**

### Abstract

The transport of crude oil requires the adoption of safety measures in port terminals, especially during the operations of loading and unloading of crude oil. Accidents at sea are further serious cause of oil pouring and cause pollution. For these reasons the port terminals are equipped with oil skimmers and boats that intervene promptly to define and collect the spill at sea. The technology of oil skimmers is subject to continuous innovation, to ensure prompt actions when operating in restricted waters, as may be the area of the Gulf of Trieste, Northern Adriatic Sea or other restricted areas within the refineries and oil terminals.

In the paper the principles by which the oil skimmers recover and transfer oil and some of the more salient changes introduced recently in this technology will be explained. Then we will present a new oil skimmer design, called FL.O.C (Flexible Oil Collector), developed under the Jonathan Project, in collaboration with the University of Trieste and the Area Science Park of Trieste.

This project is currently under construction and should allow the availability of such a system as a standard equipment in short time.

The new skimmer will allow the recovery of a high percentage of hydrocarbon in comparison to the traditional oil skimmers, will be available in very short time and will require small maintenance.