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## **Offshore Oil Collection System in Sea Using Solar Energy**

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### **ABSTRACT:**

This project shows the main points of the pollution of oil spills in marine surroundings. By exploitation solar power we are able to build it a lot of positive effort towards the surroundings. Some quantity of spill at the incorrect time or wrong season and in exceedingly sensitive surroundings might prove way more harmful. Marine oil spill could be a significant issue of off-shore oil drilling, blowouts, pipeline breakages, ship collisions or grounding and over filling of tankers. Over three million metric a lot of oil contaminates the ocean waters per annum. They have terribly dangerous effects on coastal surroundings. There are many ways to manage this pollution. The spills are controlled by booms, skimmers, sorbents, and dispersants and controlled burning processes. A number of these method don't seem to be altogether economical and Eco friendly.

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### **Relevance:**

These are usually associated with unexpected blowouts of liquid and gaseous hydrocarbons from the well as a result of encountering zones with abnormally high pressure. These types of spills are considerable, primarily due to their regularity leading, ultimately, to chronic impacts on the marine environment Generally oil spill occurs, if the equipment breaks down or failure, the tanker may get stuck on shallow land. When they start to drive the tanker again, they can put a hole in the tanker causing it to leak oil in to the sea. The spill happens when tanker collide with others ship or tanker, aground on reef, exploded due to fire, lightering accidents, hull damage and bilge pumping from ships. Sometimes the tankers or vessels hit the off-shore installations.

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### **Literature Survey:**

History: The traditional view of the oil industry is that it started in the USA in 1859, Not true, the oil seeps at Baku (in present – day Azerbaijan) flowed freely for many centuries before year one. They played major role around 600 BC in the Zoroastrian religion of Persia and India. Credit for the first drilled oil well goes to the Chinese in the year 347 AD. Oil street lights appeared in Cordoba around 900, London in 1414, and Paris in 1524. Sir Thomas Shirley presented a paper to the Royal Society in 1658 on natural gas flows in Britain. In 1739, V.I. Veitbrecht published an article name “About Oil” in the Russian Scientific magazine “Primechaniya na Vedemosti” where he described the Baku area oil wells and provided a plan of the oil and gas fields. This may be the first technical paper with a reservoir description. Azerbaijan claims the first drilled well in the modern era at Bibi – Heybat, a suburb of Baku on the Caspian Sea, in 1846. The first drilled oil wells in Europe were located near Bucharest in Romania in 1857 but Poland makes the same claim for 1854 at Bobrka. The completion of the first commercial oil well in North America occurred in 1858 at Oil Springs, Lambton County Ontario. Until 1901, Baku’s annual oil output exceeded that of the USA by as much as 25%.

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### **Proposed Work:**

Problem statement :

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Details:

Crude oil, the liquid remains of ancient plants and animals, is a fossil fuel that is used to make a wide range of fuels and products. Oil is found below ground or below the ocean floor in reservoirs, where oil droplets reside in “pores” or holes in the rock. After drilling down and pumping out the crude oil, oil companies transport it by pipes, ships, trucks, or trains to processing plants called refineries. There it is refined so it can be made into different petroleum products, including gasoline and other fuels as well as products like asphalt, plastics, soaps, and paints.

The earlier sort of solar tracking device

#### **4.2 Details**

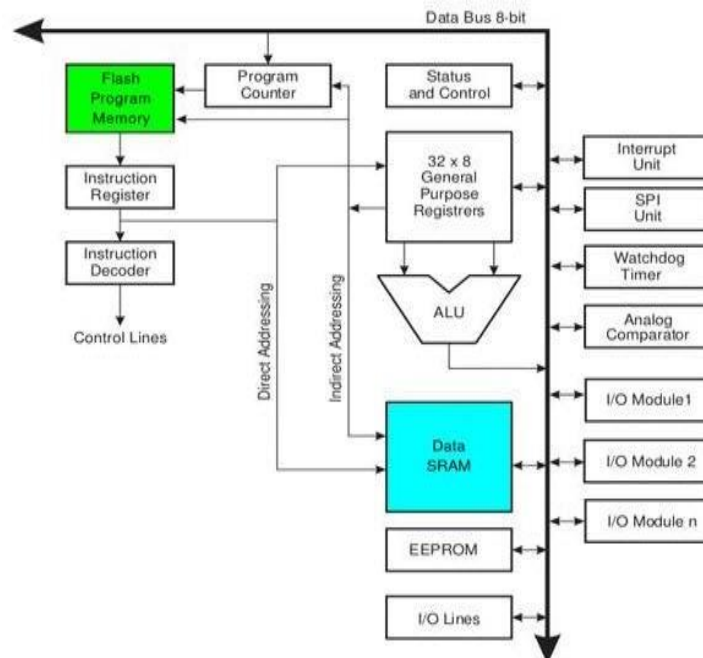
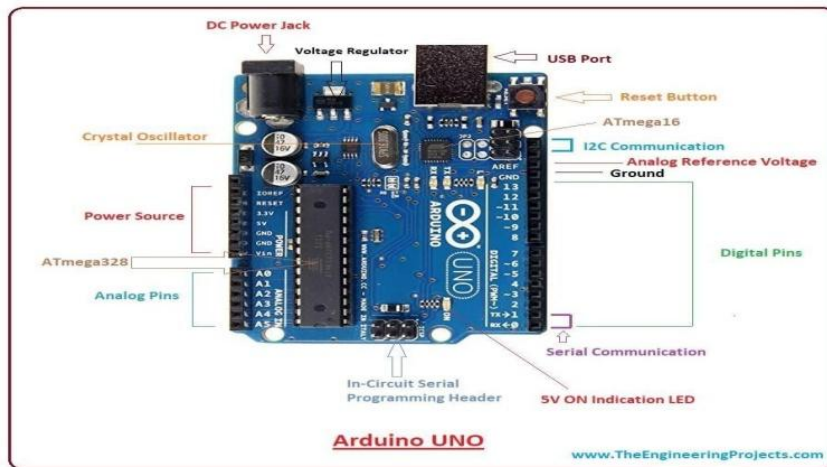
An implementation of a Sun tracking solar panel with an Arduino Uno is proposed in this dissertation work. LDRs, a solar panel, a motor, and an Arduino Uno make up the sun tracking solar panel. On the solar panel's margins, light-dependent resistors are positioned.

When light falls on a light dependent resistor, it produces a low resistance. The panel is rotated in the direction of suction by the servo motor connected to it. The panel is set up in such a way that the light from two LDRs is compared, and the panel is rotated towards the high-intensity LDRs. When the intensity of light falling on the right LDR is greater, the panel slowly moves to the right, and when the intensity of light falling on the left LDR is more, the panel slowly travels to the left. The sun is ahead at noon, and the intensity of light on both panels is the same. In such circumstances, the panel remains stationary and does not rotate. The battery stores the energy generated by the panel.

**Block Diagram:**

**Arduino:**

Arduino is an open-source electronics platform based on easy-to-use hardware and software. Arduino boards are able to read inputs light on a sensor, a finger on a button, or a Twitter message - and turn it into an output - activating a motor, turning on an LED, publishing something online. You can tell your board what to do by sending a set of instructions to the microcontroller on the board. To do so you use the Arduino programming language (based on Wiring), and the Arduino Software (IDE), based on Processing



**Arduino Architecture:**

Basically, the processor of the Arduino board uses the Harvard architecture where the program code and program data have separate memory. It consists of two memories such as program memory and data memory. Wherein the data is stored in data memory and the code is stored in the flash program memory. The Atmega328 microcontroller has 32kb of flash memory, 2kb of SRAM 1kb of EPROM and operates with a 16MHz clock speed.

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