

## LIFI BASED UNDERWATER COMMUNICATION

### AIM:

Design and development of LIFI based underwater communication.

### PURPOSE:

There are number of communications mediums available in wired and wireless sector. Especially wireless communication brings lot of convenience to our lives. All cell phone and other wireless gadgets working through wireless communication. RF, Zigbee, Bluetooth and Zigbee are wireless communication protocols and can perform their respective functionalities in hardware. Traditional radio waves will not penetrate through water. But light can penetrate and travel through water. LIFI technology works on light communication and can travel through water. This project name is LIFI based underwater communication using Arduino.

### DESCRIPTION:

Arduino and LIFI module are connected together through UART port. LIFI module transmits and receives data through UART port and data level in RS232. At LIFI transmitter side Arduino connected to PC through another serial port.

### WORKING:

In this project we are transmitting text data from LIFI transmitter to LIFI receiver. LIFI transmitter section contains PC, Arduino and LIFI transmitter. From serial terminal we have to give data and data will transmit to Arduino. Then Arduino transmits same data to LIFI module and converts into light. LIFI receiver section receives data through its solar panel and data will be displayed on 16x2 LCD display. For Demonstration purpose we can use glass tub with water for LIFI communication. Need to keep glass water tub between LIFI transmitter and LIFI receiver.

## TECHNICAL SPECIFICATIONS:

### HARDWARE:

Microcontroller	:	Arduino Uno
Crystal	:	16 MHz
LCD	:	16X2 LCD
LIFI Module	:	UART based LIFI module
Power Source	:	12v 1 amp DC battery

### SOFTWARE:

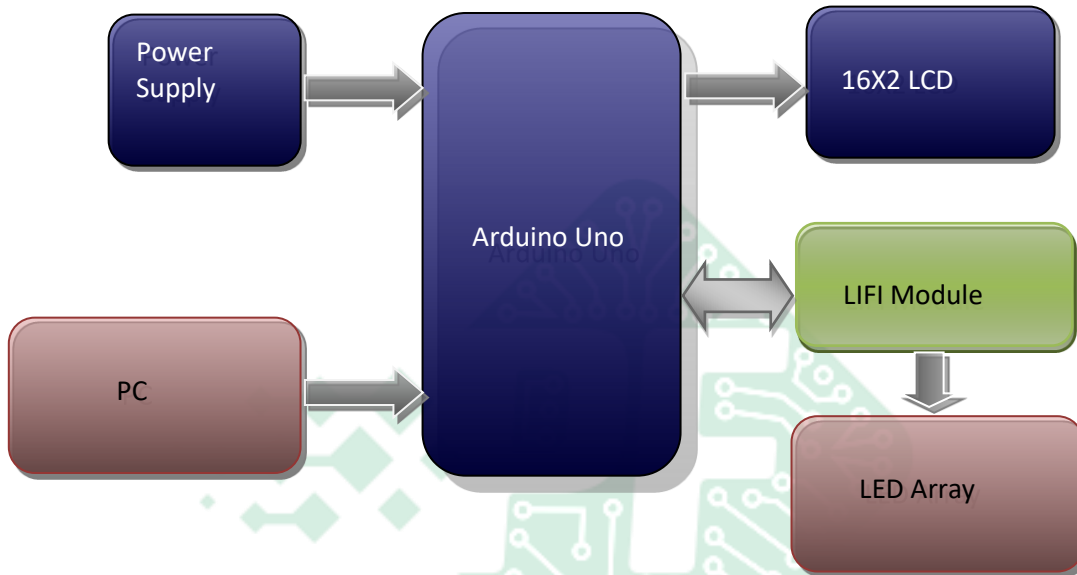
Arduino IDE  
Proteus based circuit diagram

### APPLICATIONS:

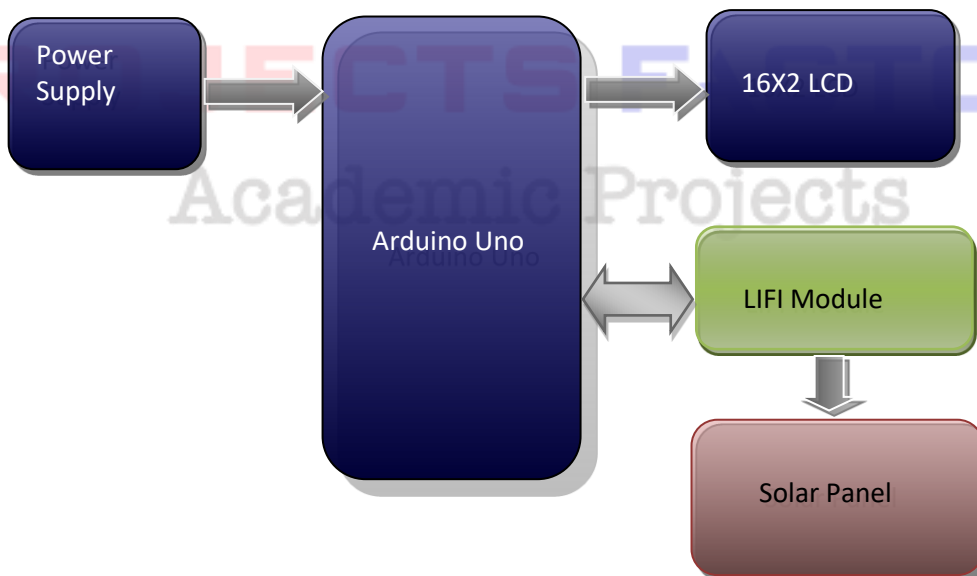
- LIFI based under water communication
- LIFI based communication through water medium
- LIFI projects
- LIFI based data communication
- LIFI based data and audio communication

**BLOCK DIAGRAM:**

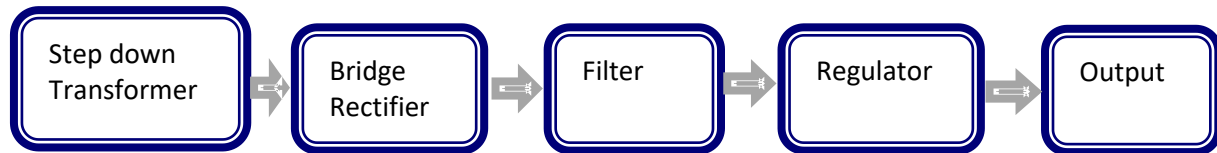
**Transmitter:**



**Receiver:**



## POWER SUPPLY BLOCKDIAGRAM:



## INTERFACES COVERED:

- We have covered LIFI module interfacing
- LIFI Arduino interfacing with UART communication

**PROJECTS FACTORY**  
Academic Projects