Govt. of Bihar

BIHAR COUNCIL ON SCIENCE & TECHNOLOGY

(GOVERNMENT OF BIHAR, DEPARTMENT OF SCIENCE & TECHNOLOGY)
IGSC-PLANETARIUM, ADALATGANJ, PATNA – 800 001

Call for projects under Students Project Programme

Bihar Council on Science & Technology, Department of Science & Technology, Government of Bihar invites project proposals for the first series of Student Project Programme which will be eligible for a maximum grant of Rs. 10,000. The project team (batch) can have a maximum of four final year students of Degree/Diploma in Govt. Engineering Colleges and Govt. Polytechnics in any discipline. The proposals are to be sent by college altogether in coordination with Student Project Programme (SPP) coordinator designated by the college. The project completed in all respects with one hard and one soft copy in a CD (.pdf) in the prescribed format (which can be downloaded from website www.bcst.org.in) should be submitted to BCST. All particulars entered should be same as in the hard copy. Handwritten and individual projects will not be accepted. Last date of submission of projects is **16.12.2019**.

Project Director
Bihar Council on Science & Technology
Email : pd@bcst.org.in

PR. 10525 (SCI & TECH) 2019-20

बेटा–बेटी एक समान। दहेज–प्रथा करे सबका अपमान।।

भारत सरकार
विज्ञान और प्रौद्योगिकी मंत्रालय
विज्ञान और प्रौद्योगिकी विभाग

GOVERNMENT OF INDIA
Ministry of Science and Technology
Department of Science and Technology
Technology Bhavan, New Mehrauli Road
New Delhi - 110016

1.	**Name of the College:** GOVERNMENT POLYYECHNIC PATNA-7
2.	**Project Title :** SMART AGRICULTURE MONITORING SYSTEM BASED ON IOT AND AUTOMATION TECHNOLOGY
3.	**Branch:** COMPUTER SCIENCE & ENGINEERING
4.	**Degree/Diploma(Engg):** DIPLOMA
5.	**Name(s) of project guide(s):** 1.Name: Prof. Mr. Krishna Kant E-mail id: nrjkumar1111@gmail.com Contact No. : 7667176374 2.Name: Prof. Mr.Sharique Ahmad E-mail id: shariquepossible@gmail.com Contact No. : 6205505025
6.	**Name of Team Members:** Name: Abhinish Tiwari SBTE Reg.No. : 1181817301 E-mail id: abhinishtiwari990@gmail.com Mobile No: 7808637064

	Name : Aditya Prakash Giri **SBTE Reg. No. : 1181817002** **E-mail id : adityaprakashgiri04121999@gmail.com** **Mobile No. : 8873726664**
7.	**Team Leader of the Project:** **Name: Abhinish Tiwari** **SBTE Reg.No. : 1181817301** **E-mail id: abhinishtiwari990@gmail.com** **Mobile No: 7808637064**
8.	**Date of commencement of the Project : 10/02/2020**
9.	**Probable date of completion of the project : 01/03/2020**

10. Scope/Objectives of the project :

Agriculture plays vital role in the development of agricultural country.In India about 70% of population depends upon farming and one third of the nation's capital comes from farming. Issues concerning agriculture have been always hindering the development of the country.

The only solution to this problem is smart agriculture by modernizing the current traditional methods of agriculture.Hence the project aims at making agriculture smart using automation and IOT technologies. This IOT based Agriculture monitoring system makes use of wireless sensor networks that collects data from different sensors deployed at various nodes and sends it through the wireless protocol. This smart agriculture using IOT system is powered by Arduino, it consist of Temperature sensor, Moisture sensor, Water level sensor, PIR sensor(It is used to detect the movement of people,animals or other objects), DC motor, GPRS module.

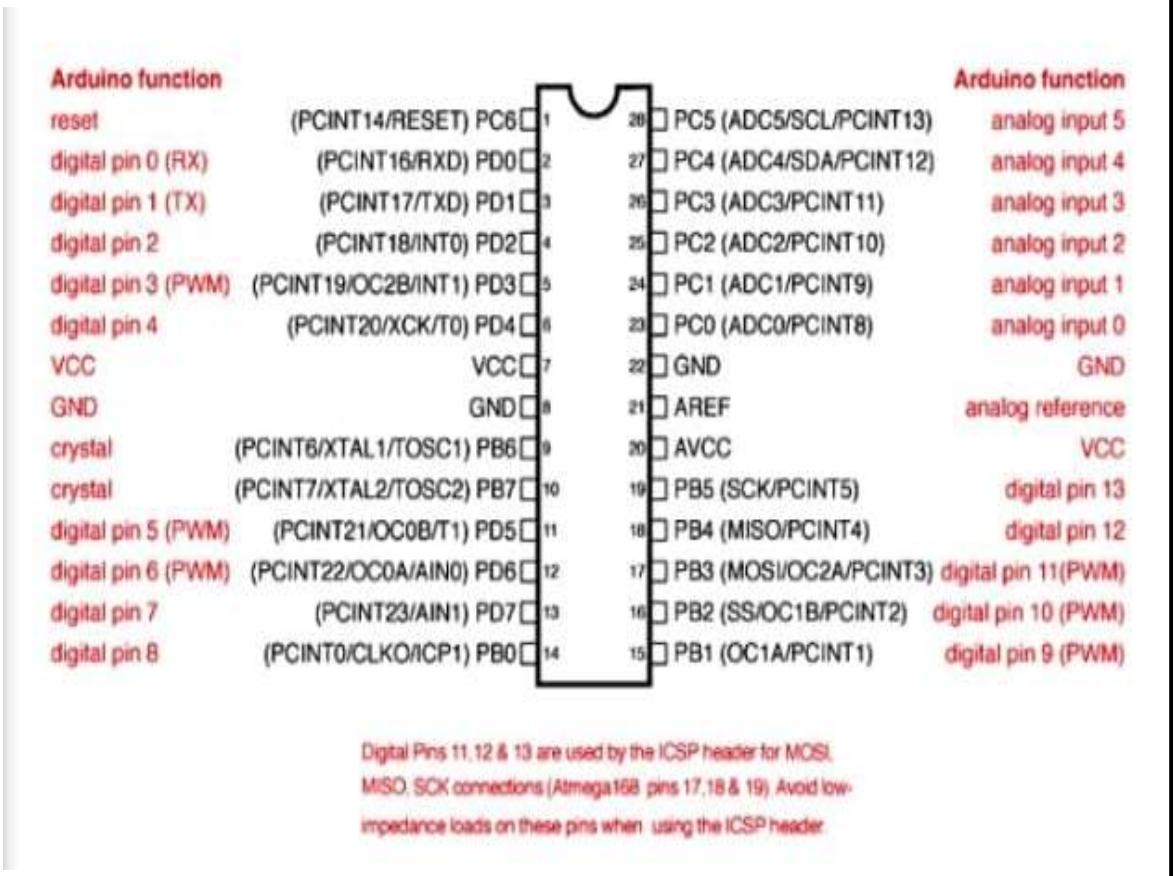
11. Literature Survey :

1. S. R. Nandurkar, V. R. Thool, R. C. Thool, "Design and Development of Precision Agriculture System Using Wireless Sensor Network",IEEE International Conference on Automation, Control, Energy and Systems (ACES), 2014.
2. JoaquínGutiérrez, Juan Francisco Villa-Medina, Alejandra Nieto-Garibay, and Miguel Ángel Porta-Gándara, "Automated Irrigation System Using a Wireless Sensor Network and GPRS Module",IEEE TRANSACTIONS ON INSTRUMENTATION AND MEASUREMENT,0018-9456,2013.
3. Hayes, J.; Crowley, K.; Diamond, D. Simultaneous web-based real-time temperature monitoring using multiple wireless sensor networks.Sensors IEEE, October 30-November 3, 2005, p. 4.
4. Q. Wang, A. Terzis and A. Szalay, "A Novel Soil Measuring Wireless Sensor Network", IEEE Transactions on Instrumentation andMeasurement, pp. 412–415, 2010.

12. **Methodology(500Words):**

The proposed system takes an automatic monitoring control action and given information. This automatic control system based on wireless sensor networks that collects data from different sensor deployed at various nodes and sends it through wireless protocol .we various sensor are deployed in the field like temperature sensor, moisture sensor and and PIR sensor. The data collected from these sensors are connected to the anduino UNO(Microcontroller).

In control section,the received data is verified with the threshold values.if the data exceed the the threshold value the buzzer is switched ON and the LED starts to blink. This alarm is sent as a message to thefarmer and automatically the power is switched OFF after sensing. The value are generated in the web page and farmer gets the detailed description of the values.



BLOCK DIAGRAM OF ANDUNO UNO

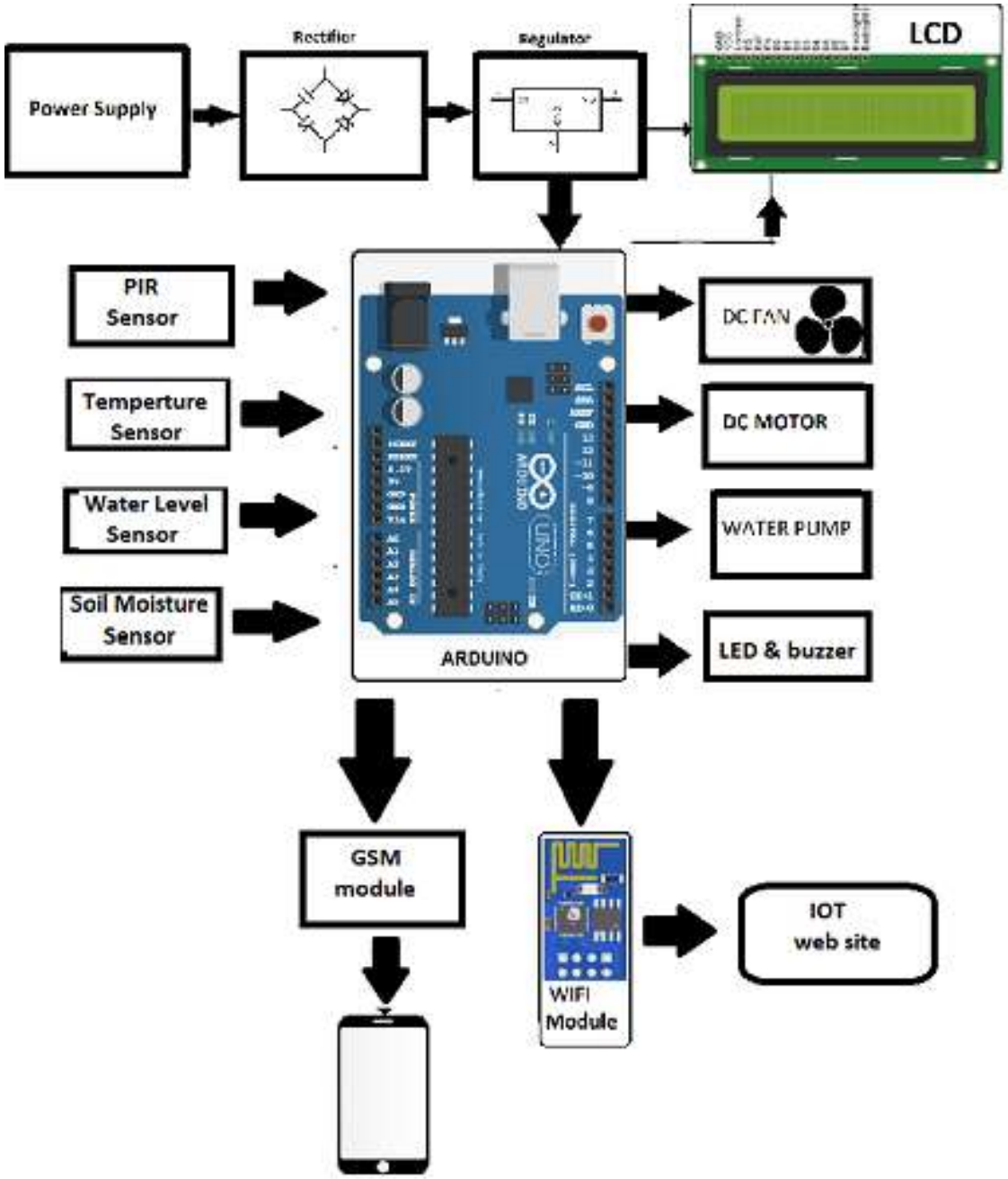
In manual mode,the user has to switch ON and OFF the microcontroller by pressing the button in the Android Application developed. This is done with the help of GSM module.

In automatic mode,the microcontroller gets switched ON and OFF automatically if the value exceeds the threshold point.soon after the microcontroller is started, automatically an alert must be sent to the user through the GSM module.

Other parameters like the temperature,humidity,moisture and the PIR sensors shows the threshold value and the water level sensor is used just to indicate the level of water inside a tank or the water resource.

13. **Expected Outcome of the project :**

BLOCK DIAGRAM OF PERPOSE SYSTEM :



14.	**Is the project proposed relevant to the Industry or Institution?:** **Yes/No : Yes** (It used to improve industries which is related to agriculture.)
15.	**Can the productor process developed in the project be taken up for filing a Patent?** **Yes/No: No.**

16. **Budget details :**

METERIAL WITH FULL SPECIFICATION	QUENTITY	AMOUNT(RS)
1. ANDUINO UNO	1	580
2. GSM MODEM	1	249
3. Wi – Fi MODEM	1	999
4. TEMPERATURE SENSOR	1	110
5. HUMIDITY SENSOR	1	300
6. PIR SENSOR	1	137
7. WATER SENSOR	1	349
8. EXHAUST FANS	1	100
9. WATER PUMP	1	375
10. CRYSTAL OSCILLATOR	1	30
11. PCB AND BREADBOARDS	1	168
12. LCD	1	775
13. TRANSFORMER/ADAPTER	1	499
14. PUSH BOTTON	1	244
15. IC & IC SOCKETS	1	320
16. SWITCH	1	125
17. OTHER MATERIALS(REGISTER, CAPACITOR, TRANSISTOR, DOIDE)	1.	300
18. TOOL BOX(SOLDING DEVICE,WIRE CUTTER, etc.)	1.	1610
TOTAL MATERIAL COST		**7366** **= 7400(say)**
MISCELLANEOUS ITEM @20%		1480
LABOUR CHARGES @15%		1110
TOTAL AMOUNT		**9990**

17.	**Any other technical details :** It is efficient method for automatically control temperature sensing, moisture sensing, water level sensing and it is used to detect movement of animals or people using PIR sensing.
18.	**SPP Coordinator** **.Name : Mrs. Smita** **E-mail id : smit7906@gmail.com** **Contact No. : 8271392592**

(Name &Signature of Project Guide with Seal)

Email id:

Contact No.:

(Name &Signature of HOD with Seal)

Email id:

Contact No.:

DECLARATION
(From Project Students)

We, the project team hereby declare that the details enclosed in the project proposal are true and correct to the best of our knowledge and belief and we undertake to inform BCST of any changes there is in the project tile, students name will be intimated immediately. In case any of the above information is found to be false or untrue or misleading, we are aware that we may be held liable for it. We hereby authorize sharing of the project information with this project proposal with the Bihar State Council on Science and Technology, Patna.
We are aware that the project team has to exhibit / demonstrate their project in the nodal centre and interact regarding project with the experts and to exhibit the project in the State Level Seminar and Exhibition (if selected). If the student team fails to attend the evaluation in nodal centre or fails to attend the State Level Seminar and Exhibition, the supported project amount will be returned back to BCST.
We also hereby, enclose the endorsement form to BCST, Patna.

Name of the students **Signature with date**

1.

2.

3.

4.

ENDORSEMENT

(From College, endorsement to be taken in the institution/Departmen tLetter head)

This is to certify that 1) Mr./Ms.…….....,2)Mr./Ms.…….....

3)Mr./Ms.…….....,4)Mr./Ms.…….....,are bonafide student(s) of Department of....., in the degree program of our institution. If the project proposal submitted by these students under the **1st** series of Student Project Programmeis selected by BCST, we will provide there quisite laboratory / Computer / infrastructure support in our college/ Institution. Further weal so take necessary steps to see that the project team will exhibit / demonstrate their project in the nodal centre and in the State Level Seminarand Exhibition (if selected).If the student team fails to send the completed project report or fails to attend the evaluation in nodal centre or fails to attend the State Level Seminarand Exhibition, the supported project amount will be returned back to BCST.

(Name & Signature of: Project Guide with Seal)	**(Signature of HOD with seal)**	**(Signature of the principal with seal)**
E-mail id:	**E-mail id:**	**E-mail id:**
Mobile No.:	**Mobile No. :**	**Mobile No. :**