

# **SOLAR POWERED INDOOR AIR PURIFIER**

Project Work submitted to



**VISVESVARAYA TECHNOLOGICAL UNIVERSITY**

in partial fulfillment of the requirements  
for the award of degree of

**BACHELOR OF ENGINEERING**  
in  
**ELECTRICAL AND ELECTRONICS ENGINEERING**

**Submitted by**

<b>DHANUSH R</b>	<b>1KG18EE002</b>
<b>DIVYA M</b>	<b>1KG18EE004</b>
<b>KEERTHANA M</b>	<b>1KG18EE007</b>

Under the Guidance of

**Dr Arun Kumar M**  
**Associate & Head**  
**Dept of Electrical & Electronics**  
**K S School of Engineering and Management**



**KSSEM**  
K.S. SCHOOL OF ENGINEERING AND MANAGEMENT

Department of Electrical and Electronics Engineering  
K.S. School of Engineering and Management  
No. 15, Mallasandra, off Kanakapura Road, Bengaluru-560109  
**2021-2022**



**KSSEM**  
K.S. Group of Institutions

**K.S. SCHOOL OF ENGINEERING AND MANAGEMENT  
DEPARTMENT OF ELECTRICAL AND ELECTRONICS  
ENGINEERING**

**CERTIFICATE**

This is to certify that the project work entitled **Solar Powered Indoor Air Purifier** is a bonafide work carried out by

**DHANUSH R**                      **1KG18EE002**

**DIVYA M**                        **1KG18EE004**

**KEERTHANA M**                **1KG18EE007**

in partial fulfillment for the award of **Bachelor of Engineering in Electrical and Electronics Engineering** of **Visvesvaraya Technological University, Belagavi**, during the year 2021-2022. It is certified that all the suggestions indicated during internal assessment have been incorporated in the report and this report satisfies the academic requirement with respect to **Project Work (18EEP83)** prescribed for the degree.

**Internal Guide**

**Head of the Department**

**Principal**

**Dr Arun Kumar M**  
Associate & Head  
Dept. of EEE

**Dr Arun Kumar M**  
Associate & Head  
Dept. of EEE

**Dr. K. Rama Narasimha**  
**Dr. K. RAMA NARASIMHA**  
Principal/Director

K S School of Engineering and Management  
Bengaluru - 560 109

**Examiners**

Associate Professor  
Head of the Department  
Department of Electrical & Electronics Engineering  
K S School of Engineering and Management  
Bengaluru-560 109

Name and Signature of Examiner-1

Name and Signature of Examiner-2



**K.S. SCHOOL OF ENGINEERING AND MANAGEMENT  
DEPARTMENT OF ELECTRICAL AND ELECTRONICS  
ENGINEERING**

**DECLARATION**

We

<b>DIANUSH R</b>	<b>1KG18EE002</b>
<b>DIVYA M</b>	<b>1KG18EE004</b>
<b>KEERTHANA M</b>	<b>1KG18EE007</b>

the students of BE VIII Semester (Electrical and Electronics Engineering) declare that the project entitled "Solar Powered Indoor Air Purifier" is carried out by us as a partial fulfillment of academic requirement of degree under Visvesvaraya Technological University. The content in the report are original and are free from plagiarism and other academic dishonesty and are not submitted to any other University either partially or wholly for the award of any other degree.

<b>NAME</b>	<b>USN</b>	<b>Signature</b>
<b>DIANUSH R</b>	<b>1KG18EE002</b>	<i>Dianush R</i>
<b>DIVYA M</b>	<b>1KG18EE004</b>	<i>Divya M</i>
<b>KEERTHANA M</b>	<b>1KG18EE007</b>	<i>Keerthana M</i>

Date: 21/07/2022  
Place: Bengaluru

# **Design and Development of Power Generation Model using Power Humps**

Project Work submitted to



## **KARNATAKA STATE COUNCIL FOR SCIENCE AND TECHNOLOGY**

in partial fulfillment of the requirements  
for the award of degree of

### **BACHELOR OF ENGINEERING in ELECTRICAL AND ELECTRONICS ENGINEERING**

Submitted by

<b>Nikitha P</b>	<b>1KG18EE009</b>
<b>Sai Darshan G</b>	<b>1KG18EE011</b>
<b>Varshini K</b>	<b>1KG18EE013</b>

**Under the Guidance of  
Mrs. Manjula B G  
Associate Professor  
Electrical and Electronics Engineering  
K S School of Engineering and Management**



Department of Electrical and Electronics Engineering  
K.S. School of Engineering and Management  
#15, Mallasandra, off Kanakapura Road, Bengaluru-560109  
**2021-2022**



**KSSEM**

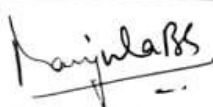


**K.S. SCHOOL OF ENGINEERING AND MANAGEMENT  
DEPARTMENT OF ELECTRICAL AND ELECTRONICS  
ENGINEERING**

**CERTIFICATE**

This is to certify that the project work entitled **Design and Development of Power Generation Model using Power Humps** is a bonafide work carried out by

<b>Nikitha P</b>	<b>1KG18EE009</b>
<b>Sai Darshan G</b>	<b>1KG18EE011</b>
<b>Varshini K</b>	<b>1KG18EE013</b>

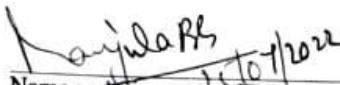
in partial fulfillment for the award of **Bachelor of Engineering in Electrical and Electronics Engineering** of **Visvesvaraya Technological University, Belagavi**, during the year 2021-2022. It is certified that all the suggestions indicated during internal assessment have been incorporated in the report and this report satisfies the academic requirement with respect to **Project Work (18EEP83)** prescribed for the degree.

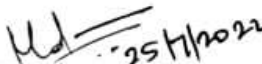
<b>Guide</b>	<b>Head of the Department</b>	<b>Principal/Director</b>
		
<b>Mrs. Manjula B G</b> Associate Professor Dept. of EEE	<b>Dr. Arun Kumar. M</b> Associate Professor & Head of the Department Dept. of EEE	<b>Dr. K. Rama Narasimha</b> KSSEM

**Examiners**

Associate Professor  
Head of the Department  
Department of Electrical & Electronics Engineering  
K.S. School of Engineering and Management  
Bengaluru-560 109

Dr. K. RAMA NARASIMHA  
Principal/Director  
K.S. School of Engineering and Management  
Bengaluru - 560 109

  
Name and Signature of Examiner-1

  
Name and Signature of Examiner-2



**K.S. SCHOOL OF ENGINEERING AND MANAGEMENT  
DEPARTMENT OF ELECTRICAL AND ELECTRONICS  
ENGINEERING**

**DECLARATION**

We

<b>Nikitha P</b>	<b>1KG18EE009</b>
<b>Sai Darshan G</b>	<b>1KG18EE011</b>
<b>Varshini K</b>	<b>IKG18EE013</b>

the students of **BE VIII Semester (Electrical and Electronics Engineering)** declare that the project entitled “**Design and Development of Power Generation Model using Power Humps**” is carried out by us as a partial fulfillment of academic requirement of degree under **Visvesvaraya Technological University**. The content in the report are original and are free from plagiarism and other academic dishonesty and are not submitted to any other University either partially or wholly for the award of any other degree.

<b>NAME</b>	<b>USN</b>	<b>Signature</b>
<b>Nikitha P</b>	<b>1KG18EE009</b>	<i>Nikitha P</i>
<b>Sai Darshan G</b>	<b>1KG18EE011</b>	<i>Sai Darshan G</i>
<b>Varshini K</b>	<b>IKG18EE013</b>	<i>Varshini K</i>

Date: 30-06-2022  
Place: Bengaluru

# **DESIGN AND DEVELOPMENT OF IOT SURVEILLANCE SYSTEM**

Project Work submitted to



## **VISVESVARAYA TECHNOLOGICAL UNIVERSITY**

in partial fulfillment of the requirements for the award of degree of

### **BACHELOR OF ENGINEERING**

in

### **ELECTRICAL AND ELECTRONICS ENGINEERING**

Submitted by

**JAYAWANTH B**

**1KG18EE005**

**SUSHMA UDUPA K S**

**1KG18EE012**

Under the Guidance of

**Mrs. Hemapriya M**

**Assistant Professor**

**Department of EEE**

**K S School of Engineering and Management**



**KSSEM**  
K. S. School of Engineering and Management

**Department of Electrical and Electronics Engineering**

**K.S. School of Engineering and Management**

**No. 15, Mallasandra, off Kanakapura Road, Bengaluru-560109**

**2021-2022**



K.S. SCHOOL OF ENGINEERING AND MANAGEMENT DEPARTMENT OF  
ELECTRICAL AND ELECTRONICS ENGINEERING




## CERTIFICATE

This is to certify that the project work entitled **DESIGN AND DEVELOPMENT OF IOT SURVEILLANCE SYSTEM** is a bonafide work carried out by

**1KG18EE005**  
**1KG18EE012**

**JAYAWANTH B**  
**SUSHMA UDUPA K S**

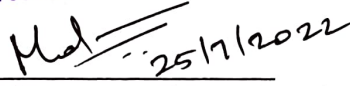
in partial fulfillment for the award of **Bachelor of Engineering in Electrical and Electronics Engineering** of **Visvesvaraya Technological University, Belagavi**, during the year 2021-2022. It is certified that all the suggestions indicated during internal assessment have been incorporated in the report and this report satisfies the academic requirement with respect to **Final year Project (18EEP83)** prescribed for the degree.

Internal Guide	Head of the Department	Principal
		
<b>Mrs. Hemapriya M</b> Assistant professor Dept. of EEE	<b>Dr. Arun Kumar M</b> Head of the Department Dept. of EEE	<b>Dr. K. Rama Narasimha</b> KSSEM

Associate Professor  
Head of the Department  
Department of Electrical & Electronics Engineering  
KS School of Engineering and Management  
Bengaluru-560 109

Principal/Director  
KSSEM  
KS School of Engineering and Management  
Bengaluru - 560 109

  
Name and Signature of Examiner-1

  
Name and Signature of Examiner-2





K.S. SCHOOL OF ENGINEERING AND MANAGEMENT DEPARTMENT OF ELECTRICAL  
AND ELECTRONICS ENGINEERING

## DECLARATION

We,

**JAYAWANTH B                      1KG18EE005**  
**SUSHMA UDUPA K S            1KG18EE012**

the students of **BE VIII Semester (Electrical and Electronics Engineering)** declare that the project entitled **DESIGN AND DEVELOPMENT OF IOT SURVEILLANCE SYSTEM** is carried out by us as a partial fulfillment of academic requirement of degree under **Visvesvaraya Technological University**. The content in the report are original and are free from plagiarism and other academic dishonesty and are not submitted to any other University either partially or wholly for the award of any other degree.

<b>NAME</b>	<b>USN</b>	<b>Signature</b>
JAYAWANTH B	1KG18EE005	
SUSHMA UDUPA K S	1KG18EE012	

Date: 30-06-2022  
Place : Bengaluru

# **DESIGN AND DEVELOPMENT OF SUBSTATION MONITORING AND CONTROL SYSTEM USING IoT**

Project Work submitted to



**VISVESVARAYA TECHNOLOGICAL UNIVERSITY**

in partial fulfillment of the requirements  
for the award of degree of

**BACHELOR OF ENGINEERING**  
in  
**ELECTRICAL AND ELECTRONICS ENGINEERING**

Submitted by

<b>ARJUN A</b>	<b>1KG17EE002</b>
<b>DHEENA P</b>	<b>1KG18EE003</b>
<b>SAGAR K</b>	<b>1KG18EE010</b>

Under the Guidance of

**Mrs. Manjula B G**  
**Associate Professor**  
**Electrical and Electronics Engineering**  
**K S School of Engineering and Management**



Department of Electrical and Electronics Engineering  
K.S. School of Engineering and Management  
No. 15, Mallasandra, off Kanakapura Road, Bengaluru-560109  
**2021-2022**



**K.S. SCHOOL OF ENGINEERING AND MANAGEMENT  
DEPARTMENT OF ELECTRICAL AND ELECTRONICS  
ENGINEERING**

**CERTIFICATE**

This is to certify that the project work entitled **DESIGN AND DEVELOPMENT OF SUBSTATION MONITORING AND CONTROL SYSTEM USING IoT** is a bonafide work carried out by

**ARJUN A**                      **1KG17EE002**  
**DHEENA P**                    **1KG18EE003**  
**SAGAR K**                      **1KG18EE010**

in partial fulfillment for the award of **Bachelor of Engineering in Electrical and Electronics Engineering** of Visvesvaraya Technological University, Belagavi, during the year 2021-2022. It is certified that all the suggestions indicated during internal assessment have been incorporated in the report and this report satisfies the academic requirement with respect to **Final year Project (18EEP83)** prescribed for the degree.

Guide	Head of the Department	Principal / Director
<b>Mrs. Manjula B G</b> Associate Professor Department of EEE	<b>Dr. Arun Kumar M</b> Associate Professor & Head of the Department Department of EEE Associate Professor Head of the Department	<b>Dr. K. RAMA NARASIMHA</b> Principal/Director <b>Dr. K. Rama Narasimha</b> K S School of Engineering and Management KSSEM Bengaluru - 560 109

**Examiners**

Name and Signature of Examiner-1  
25/7/22

**Department of Electrical & Electronics Engineering**  
**K S School of Engineering and Management**  
Bengaluru-560 109

Name and Signature of Examiner-2  
25/7/2022



**K.S. SCHOOL OF ENGINEERING AND MANAGEMENT  
DEPARTMENT OF ELECTRICAL AND ELECTRONICS  
ENGINEERING**

**DECLARATION**

We

ARJUN A	1KG17EE002
DHEENA P	1KG18EE003
SAGAR K	1KG18EE010

the students of **BE VIII Semester (Electrical and Electronics Engineering)** declare that the project entitled **DESIGN AND DEVELOPMENT OF SUBSTATION MONITORING AND CONTROL SYSTEM USING IoT** is carried out by us as a partial fulfillment of academic requirement of degree under **Visvesvaraya Technological University**. The content in the report is original and are free from plagiarism and other academic dishonesty and are not submitted to any other University either partially or wholly for the award of any other degree.

NAME	USN	Signature
ARJUN A	1KG17EE002	
DHEENA P	1KG18EE003	
SAGAR K	1KG18EE010	

Date: 30/6/2022  
Place: Bengaluru

**Project Proposal Reference Number: 45S\_BE\_3323**  
**DESIGN AND DEVELOPMENT OF COST-EFFECTIVE 3D PRINTER**

*A Project sponsored by*



**KARNATAKA STATE COUNCIL FOR SCIENCE AND TECHNOLOGY**  
**INDIAN INSTITUTE OF SCIENCE CAMPUS**  
**BENGALURU -560012**

*In partial fulfilment*

*Submitted by*

**SARVESH M**                      **1KG16EE025**

**ANILKUMAR S**                      **1KG17EE001**

*Under the Guidance of*

**Mrs. TEJASWINI G V**  
Assistant Professor  
Dept. of Electrical and Electronics Engineering  
KSSEM, Bengaluru



**KSSEM**  
KARNATAKA STATE SCHOOL OF ENGINEERING AND MANAGEMENT

Department of Electrical and Electronics Engineering  
K.S. School of Engineering and Management  
No. 15, Mallasandra, off Kanakapura Road, Bengaluru – 560109  
**2021-2022**



**K.S. SCHOOL OF ENGINEERING AND MANAGEMENT  
DEPARTMENT OF ELECTRICAL AND ELECTRONICS  
ENGINEERING**

**CERTIFICATE**

This is to certify that the project work entitled **DESIGN AND DEVELOPMENT OF COST-EFFECTIVE 3D PRINTER** is a bona fide work carried out by


**SARVESH M                      1KG16EE025**  
**ANILKUMAR S                1KG17EE001**


in partial fulfillment for the award of **Bachelor of Engineering in Electrical and Electronics Engineering** of **Visvesvaraya Technological University, Belagavi**, during the year 2021-2022. It is certified that all the suggestions indicated during internal assessment have been incorporated in the report and this report satisfies the academic requirement with respect to **Final year Project (17EEP85)** prescribed for the degree.

**Guide**

**Head of the Department**

**Principal / Director**

  
**Mrs. Tejaswini G V**  
Assistant Professor  
Department of EEE

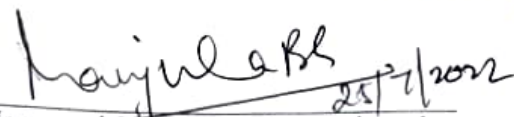
  
**Dr. Arun Kumar M**  
Associate Professor &  
Head of the Department  
Department of EEE  
Associate Professor  
Head of the Department

  
**Dr. K. Rama Narasimha**  
KSSEM  
Dr. K. RAMA NARASIMHA  
Principal/Director

**Examiners**

Department of Electrical & Electronics Engineering, K S School of Engineering and Management  
K S School of Engineering and Management  
Bengaluru-560 109

Bengaluru - 560 109

  
Name and Signature of Examiner-1

  
Name and Signature of Examiner-2



**K.S. SCHOOL OF ENGINEERING AND MANAGEMENT  
DEPARTMENT OF ELECTRICAL AND ELECTRONICS  
ENGINEERING**

**DECLARATION**

We

**SARVESH M                      1KG16EE025**  
**ANILKUMAR S                1KG17EE001**

the students of **BE VIII Semester (Electrical and Electronics Engineering)** declare that the project entitled **DESIGN AND DEVELOPMENT OF COST-EFFECTIVE 3D PRINTER** is carried out by us as a partial fulfillment of academic requirement of degree under **Visvesvaraya Technological University**. The content in the report are original and are free from plagiarism and other academic dishonesty and are not submitted to any other University either partially or wholly for the award of any other degree.

<b>NAME</b>	<b>USN</b>	<b>Signature</b>
SARVESH M	1KG16EE025	
ANILKUMAR S	1KG17EE001	<i>S. Anilkumar</i>

Date: *30/6/2022*  
Place: Bengaluru

# **HYDROPOWER GENERATION USING MICROTURBINE IN THE PLUMBING SYSTEM OF THE BUILDING**

Project Work submitted to



**VISVESVARAYA TECHNOLOGICAL UNIVERSITY**

in partial fulfilment of the requirements  
for the award of a degree of

**BACHELOR OF ENGINEERING**

in

**ELECTRICAL AND ELECTRONICS ENGINEERING**

Submitted by

**DEEPAK A S                      1KG16EE010**

**KIRAN KUMAR G                1KG16EE015**

Under the Guidance of

**Mrs Tejaswini G V**

**Assistant Professor**

**Dept. Of E&E Engineering**

**K. S. School of Engineering and Management**



**KSSEM**  
K.S. Group of Institutions

Department of Electrical and Electronics Engineering  
K.S. School of Engineering and Management  
No. 15, Mallasandra, off Kanakapura Road, Bengaluru-560109  
**2021-2022**





**K.S. SCHOOL OF ENGINEERING AND MANAGEMENT  
DEPARTMENT OF ELECTRICAL AND ELECTRONICS  
ENGINEERING**

**CERTIFICATE**

This is to certify that the project work entitled **HYDROPOWER GENERATION USING MICROTURBINE IN THE PLUMBING SYSTEM OF THE BUILDING** is a bonafide work carried out by

**DEEPAK A S                      1KG16EE010**  
**KIRAN KUMAR G                1KG16EE015**

in partial fulfilment for the award of **Bachelor of Engineering in Electrical and Electronics Engineering** of **Visvesvaraya Technological University, Belagavi**, during the year 2021-2022. It is certified that all the suggestions indicated during the internal assessment have been incorporated in the report and this report satisfies the academic requirement with respect to **Project Work (15EEP85)** prescribed for the degree.


**Internal Guide**

**Head of the Department**

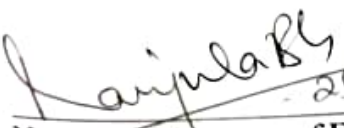
**Principal**

  
**Mrs. Tejaswini G V**  
Assistant professor  
Dept. of EEE

  
**Dr. Arun Kumar M**  
Associate professor & Head  
Dept. of EEE  
Associate Professor  
Head of the Department  
Department of Electrical & Electronics Engineering  
K.S. School of Engineering and Management  
Bengaluru-560 109

  
**Dr. K. Rama Narasimha**  
KSSEM  
Dr. K. RAMA NARASIMHA  
Principal/Director  
K.S. School of Engineering and Management  
Bengaluru - 560 109

**Examiners**

  
25/07/2022  
Name and Signature of Examiner-1

  
25/07/2022  
Name and Signature of Examiner-2



**KSSEM**


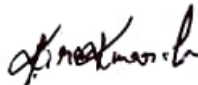
**K.S. SCHOOL OF ENGINEERING AND MANAGEMENT  
DEPARTMENT OF ELECTRICAL AND ELECTRONICS  
ENGINEERING**

**DECLARATION**

We,

**DEEPAK A S                    1KG16EE010**  
**KIRAN KUMAR G            1KG16EE015**

the students of **BE VIII Semester (Electrical and Electronics Engineering)** declare that the project entitled "**Hydropower generation using microturbine in the plumbing system of the building**" is carried out by us as partial fulfillment of academic requirement of degree under **Visvesvaraya Technological University**. The content in the report is original and are free from plagiarism and other academic dishonesty and are not submitted to any other University either partially or wholly for the award of any other degree.

<b>NAME</b>	<b>USN</b>	<b>Signature</b>
DEEPAK A S	1KG16EE010	
KIRAN KUMAR G	1KG16EE015	

Date: 30/6/2022  
Place: Bengaluru