



DEPARTMENT OF ZOOLOGY
Govt. Zirtiri Residential Science College
Aizawl, Mizoram

Report on Virtual Field Trip Visit During 2020-21



1. Name of Department : Zoology
2. Name of Paper : ZL XVI A: Practical Field
3. Place of Visit :
 - Barbados Island, West Indies
 - CIFA, Bhubaneswar
 - Louyuan Bay, South-Eastern China, Fujian Province.
 - Link : <https://youtu.be/UrHlOKi6z00>
4. Date of Visited : **13th October, 2021**
5. Students involved : 5th Semester Zoology Students 41 students
6. Guide : 2
7. **Objectives** : Develop “technical competency” by observing, collecting, interpreting, recording and evaluating geographic information and to evaluate or estimate the biotic communities on fish pond through fieldwork.
8. **Outcome** : Expose students to new experiences and can increase interest and engagement in science regardless of prior interest in a topic especially in fish Biology

Government Zirtiri Residential Science College organised virtual field trip in the selected Barbados Island-West Indies, CIFA-Bhubaneswar, and Louyuan Bay-South-Eastern China, Fujian Province. Due to covid-19, it is not able to go to the selected places, that's why the selected places are visited and seen through google meet.

Number of students	=	41
Teacher (Guide)	=	1
Total members	=	42

IMPORTANT PLACE VISITED:

1. Barbados Island, West Indies:-



Barbados is located in the Caribbean region of the North Atlantic Ocean. As an Island in the Lesser Antilles, Barbados is a country in the West Indies.



Barbados is sometimes called as “The land of the flying fish” because the flying fishes are commonly found in Barbados. The species found in this region are about 25 cm long and shaped like a herring.

The remarkable feature of this fish is its ability to “fly”. Actually, the fish don’t “fly” they glide through the air up to distances of 30-40 meters. Just before take-off, the fish swims quickly towards the surface, bursting into the air at speeds of 55 kmph.

Once it is airborne, the fish spreads its large pectoral fins and appears to be “flying”. This ability helps the fish to escape from predators.

GEOGRAPHICAL MAP OF BARBADOS ISLAND:-



2. CIFA (Central Institute of Freshwater Agriculture), Bhubaneswar:-



CIFA is an Advanced Research Institute for freshwater agriculture established in 1949 at Cuttack, Orissa (new name – Odisha). Face many challenges in the field of fish culture in ponds, tanks and another small body. The institute was gradually developed and became an independent Institute in 1987 at Bhubaneswar, Orissa under the aegis of the Indian Council for Agriculture Research (ICAR), New Delhi.



CIFA has successfully bred and standardized the successful rearing of 16 indigenous ornamental species from NEH, Eastern and Southern Western Ghat region comprising barbs, danios, rasboras, catfish and chameleon fish.

GEOGRAPHICAL MAP OF CIFA:-



3. Largest Floating Fish Farm in China :-



In Louyuan Bay in South-Eastern China's Fujian Province, many floating farms have been built to cultivate crustaceans such as shrimps, and mollusc such as oysters and fish are raised in artificial enclosures.



These forms are created by floating netted enclosures from a sprawling network of interconnected wooden pathways and platforms. Over these, fishermen have built wooden houses and huts where entire families live.

This specialized branch of aquaculture has become so big that it has even begun to attract many tourists. So large are the farms at Louyuan, in fact, that they almost cover the entire bay.

GEOGRAPHICAL MAP OF LARGEST FLOATING FISH FARM IN CHINA:-



List of Zoology students present for the field Trip

Sl No	Roll No	Name	Attendance	
			P=Present	Remark
1	2007BS004	ANNE LALPEKKIMI	P	
2	2007BS011	BIAKHMINGLIANI	P	
3	2007BS014	C. LALREMRUATI	P	
4	2007BS021	C. VANHMINGLIANI	P	
5	2007BS029	DAVID LALRAMZAUVA	P	
6	2007BS035	EMMANUEL LALHRIATPUIA	P	
7	2007BS036	ESTHER LALCHHANCHHUAHI	P	
8	2007BS037	ESTHER ZORINPUII	P	
9	2007BS039	F. SANGTHANZUALA	P	
10	2007BS044	GRACE VL RUATFELI HNAME	P	
11	2007BS046	H. LALNUNFELI	P	
12	2007BS048	H. ZODINPUII	P	
13	2007BS055	HMINGTHANZUALA	P	
14	2007BS065	JOSHUA LALRINHLUA SAILO	P	
15	2007BS067	K BEIHMOSA	P	
16	2007BS068	K. BEIPASASA	P	
17	2007BS072	K. LALRUATFELA	P	
18	2007BS073	K. MALSAWMTLUANGA	P	
19	2007BS074	K. VANLALLAWMAWMI	P	
20	2007BS079	L. LALHMANGAIHZAUVI	P	
21	2007BS082	LALBIAKDIKI	P	
22	2007BS088	LALCHHUANGMAWII	P	
23	2007BS105	LALNUNFELA	P	
24	2007BS107	LALRAMCHHUANA	P	
25	2007BS117	LALREMRUATPUII	P	
26	2007BS120	LALRINAWMI PACHUAU	P	
27	2007BS126	LALRINNUNGI	P	
28	2007BS135	LALTANPUIA	P	
29	2007BS139	LALZARZOVA	P	
30	2007BS145	MALSAWMDAWNGZELA	P	
31	2007BS152	MELODY LALHMANGAIHKIMI	P	
32	2007BS157	MOSES LALTLANSANGA	P	
33	2007BS167	PC VANLALCHHHANHIMA	P	
34	2007BS168	PC VANTHANGPUII	P	
35	2007BS169	R. LALHMANGAIHZUALI	P	
36	2007BS180	REBEK V.L. THAPUII	P	
37	2007BS200	T. LALZARZOVI	P	
38	2007BS202	T. ZORINPUIA	P	
39	2007BS205	TH. CHANULEMBI DEVI	P	
40	2007BS223	WILSON BYHNARONA	P	
41	2007BS226	ZONUNSANGI	P	

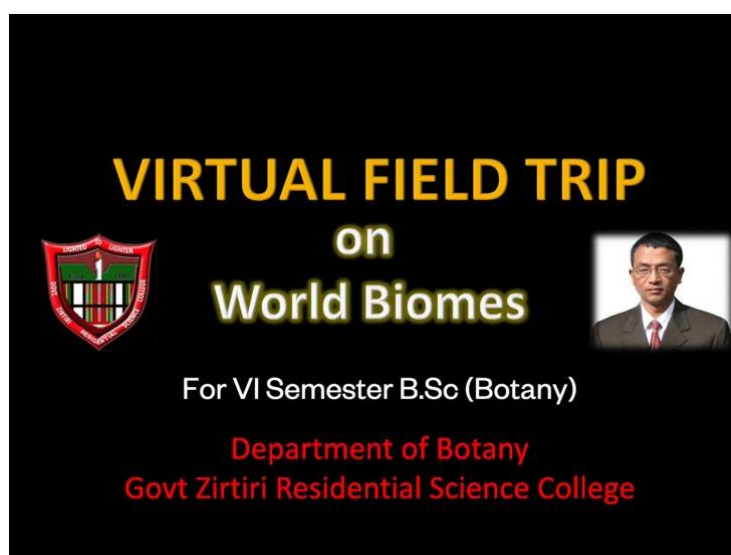
Department of Botany
Government Zirtiri Residential Science College
Field Trip Report 2022

- | | |
|--------------------------|---|
| 1. Department | : Botany |
| 2. Paper | : BOT/V/CC/16 |
| 3. Places of visit | : Field trip to different types of world biomes with special reference to desert and taiga biomes (Virtual Field Trip)
https://youtu.be/ILUQUbbaDSg |
| 4. Date of field trip | : 30.5.22 |
| 5. Students involved | : VI semester Botany core students |
| 6. Faculty guides | : Dr R. Lalengmawia, Lalnunthara |
| 7. Objective information | : To provide students a visual opportunity to gather
and supplement their theoretical knowledge on world
biomes. |
| 8. Outcome | : The students gained a deeper knowledge and an increased
interest and understanding on plant habitat and vegetation |

Report on Virtual Field Trip

The Virtual trip was organised by the Department of Botany Govt. Zirtiri Residential Science College, for the VI semester students of Botany on 30th May 2022. Different types of world biomes with special reference to desert biomes such as sub-tropical, semiarid, coastal and polar deserts along with the diversity of taiga biomes were explained with motion pictures showing the richness of vegetation and the adaptation to a specific climate.

This virtual trip was an effective tool for students to gain deeper knowledge through visual aid. Observation and collection of information will assist the student, and give motivation, gaining more knowledge and understanding about the plant habitat and vegetation.



DESERT BIOMES

The Desert Biome

- Characteristics:
 - Hot and dry
 - Desert covers about 1/5 of the Earth's land surface
 - For the plants to survive they adapt:
 - Store water for long periods of time
 - Stand the hot weather



Desert Plants

- Thorny bushes and **cacti** are typical desert plants.
- Plants grow far apart so they won't have to compete with each other for **water**.
- Cacti have root systems that take up **water** quickly when it rains.
- The lack of **leaves** on cacti decreases water loss from **evaporation**.



Tropical Rainforest



Temperate Forest



Coniferous Forest (Taiga)



Tropical Grassland (Savannah)



Temperate Grassland



Mediterranean



Desert



Tundra



Mountain

List of Botany students who participated in the Virtual Field Trip

Sl. No.	Roll No 1907BS	Name	Attendance
1	002	Angel Lalvohbiki	P
2	009	Benjamin Lalnunpuia	P
3	010	Benjamin Ngurthansanga	P
4	013	C.Lalchhanhimi	P
5	015	C. Lalengzauva	P
6	022	C. Ngongia	P
7	028	Cecilia Chingmuanhawih	P
8	043	H.Lalawmpuia	P
9	045	H. Lalnunhlui	P
10	046	H.Lalruatsanga	P
11	048	Henry L Hmar	P
12	052	Irish Lalenkawli	P
13	054	Isak Malsawmtluanga	P
14	058	Jerome Lalfakhlena	P
15	072	Lalbiakmawii	P
16	073	Lalbiaksiamia	P
17	074	Lalchawimawii	P
18	081	Lalfakzuala	P
19	092	Lallawmawmi	P
20	101	Lalnuntluanga	P
21	102	Lalnuntluangi	P
22	104	Lalparvuli	P
23	110	Lalrinchama	P
24	118	Lalrotlinga	P
25	119	LalruatdikaSailo	P
26	130	Laltlanmawii	P
27	131	Laltlansangi Sailo	P
28	134	Lily Chanchinmawii	P
29	136	M. Thuthlungropuii	P
30	137	Madhu Maya	P
31	149	PC. Vanlalhruaia	P
32	153	R. Lalramhnaii	P
33	162	Ruthi F Lalnuntluangi	P
34	163	S. Agape Lalvenhimi	P
35	174	V. Lalrinmawia	P
36	176	Vanlalawmpuii	A
37	178	Vanlalhruaitluangi	P
38	182	VanlalnghakaHnamte	P
39	189	William Ngursangzuala	P

Department of Biochemistry
Government Zirtiri Residential Science College

Report on Hands on training for 2nd Semester Students, Department of Biochemistry on the preparation of hand Sanitizer based on WHO Standard Protocol

A hands on training on the preparation of hand sanitizer was organized for second semester students of Biochemistry, Govt. Zirtiri Residential Science College under the supervision of the faculty members of Biochemistry department on 18th March, 2022 at biochemistry laboratory of the college. The WHO standard protocol was used as a reference guide. For this training a total of 27 students attended the course.

The objective of this program was to empower students with the new skill and knowledge on the preparation of alcohol-based hand sanitizer.

The outcome of this training program was that students went home gaining a new skill on the preparation of hand sanitizer which has proved to be an important tool in the fight against COVID19 and other epidemics. Such a skill could be passed on and also be used for community service. A total of 20 litres was prepared by the students on this program. The freshly prepared hand sanitizers were later handed over to the college authority for subsequent use as and when necessary.

List of faculty members as resource persons

1. Dr. Fanai Lalsangluaii, Asst. Prof (HOD)
2. Lalrosangpuui, Asst. Prof
3. K. Zosangpuui, Asst. Prof
4. Dr. Rebecca Vanlalsangi, Asst. Prof
5. Dr. PC. Lalrinfela, Asst. Prof





List if second semester students participated in hand sanitizer preparation training

S/no	Roll No	Name
1	2107BS012	B. Lalhriatpuia
2	2107BS022	C. Laldawngmuana
3	2107BS024	C. Lalduhawmi
4	2107BS027	C. Lalremruata
5	2107BS030	C. Nelson Beiraduakhei
6	2107BS038	Christopher Lianzova
7	2107BS051	Esther Lalthakimi
8	2107BS069	H. SingiaAzyu
9	2107BS071	H. Zodintluanga
10	2107BS072	HC. Lalramdinmawii
11	2107BS073	HD. Lalfamkima
12	2107BS097	K. Sunita Singh
13	2107BS107	LaithangpuiiChenkual
14	2107BS119	Lalfakmawii
15	2107BS156	Lalrempuii Chhakchhuak
16	2107BS192	Lalzarzoi
17	2107BS199	Lucy Lallawmawmi
18	2107BS222	Ng JoynethMarapawti
19	2107BS238	R. Lalhmingthianghlima
20	2107BS261	Romalsawma
21	2107B272	S.JulieLalruathlupuii
22	2107BS286	T. Lalawmpuii
23	2107BS293	V. Lalchansanga
24	2107BS296	Vanlalawmpuia
25	2107BS303	Vanlalmawii
26	2107BS305	Vanlalpeka
27	2107BS324	Zothanmawia

Department of Electronics
Govt. Zirtiri Residential Science College
(July 2021 – June 2022)

Project Phase -I: V semester July- Nov 2021

Project Phase -I (July-Nov, 2021) for V Semester Electronics Core students have been carried out successfully under the supervision of Dr. Ricky Lalmangaihzualla. Different projects were allotted to each student such as Metal Detector, IM 386 Audio Amplifier, Audio Amplifier, GSM Based Water Pump Control System, Automatic Room Light System Using Microcontroller, Smoke Alarm etc. which are detailed in the following table. These projects were mainly aimed to inculcate various modern techniques utilized by industries for their mass productions.

Sl. No.	Roll No.	Name of student	Project work/ field study of students	Year
1	1907BS007	Beihrohrua Zawtha	Metal Detector	Project Phase -I V semester July- Nov 2021
2	1907BS011	C. Hmingchungnunga	IM 386 Audio Amplifier	
3	1907BS016	C. Lalengzuali	Audio Amplifier	
4	1907BS039	Fc. Eliasa	GSM Based Water Pump Control System	
5	1907BS061	John Lalmuanpuia	Automatic Room Light System Using Microcontroller	
6	1907BS070	K. Thantluanga	Smoke Alarm	
7	1907BS117	Lalrosiama	Quatcopter/Drone	
8	1907BS122	Lalruatsaka	Water Level Indicator	
9	1907BS145	Nelson Lalramchhana	Electronic Thermometer	
10	1907BS160	Rinsangpuia	Automatic street light using LDR	
11	1907BS181	Vanlalmuanzuala	Solar power bank	
12	1907BS186	Vanmalsawma	Solar Inverter	

1. Beihrohrua Zawtha

CERTIFICATE

This is to certify that Beihrohrua Zawtha of 5th Semester B.Sc Roll No 1907BS007, Regn. No 1902042 has done the project "Metal Detector" and has completed under my supervision. He has shown a satisfactory performance in his work and his conduct and his interest in this project is satisfactory.

Date: 26th October, 2021

Place: Aizawl


(Dr. RICKY LALHMANGAIHZUALA)

Supervisor,
Department of Electronics
Govt. Zirtiri Res. Sc. College
Aizawl

Countersigned by,


(Dr. RICKY LALHMANGAIHZUALA)

Head of Department
Department of Electronics
Govt. Zirtiri Res. Sc. College
Aizawl

Head
Dept. of Electronics
Govt. Zirtiri Res. Science College
Aizawl : Mizoram

2. C. Hmingchungnunga

CERTIFICATE

This is to certify that C. Hmingchungnunga of 5th Semester B.Sc Roll No 1907BS011, Regn No 1902045 has done the project "IM 386 Audio Amplifier" and has completed under my supervision. He has shown a satisfactory performance in his work and his conduct and his interest in this project is satisfactory.

Date: 26th October, 2021

Place: Aizawl


(Dr. RICKY LALHMANGAIHZUALA)

Supervisor,
Department of Electronics
Govt. Zirtiri Res. Sc. College
Aizawl

Countersigned by,


(Dr. RICKY LALHMANGAIHZUALA)

Head of Department
Department of Electronics
Govt. Zirtiri Res. Sc. College
Aizawl

Head
Dept. of Electronics
Govt. Zirtiri Res. Sc. College
Aizawl

3. C. Lalengzuali

CERTIFICATE

This is to certify that C. Lalengzuali of 5th Semester B.Sc Roll No 1907BS016,
Regn No 1902050 has done the project "Audio Amplifier" and has completed under my
supervision. She has shown a satisfactory performance in her work and her conduct and
her interest in this project is satisfactory.

Date: 26th October, 2021

Place: Aizawl


(Dr. RICKY LALHMANGAIHZUALA)

Supervisor,
Department of Electronics
Govt. Zirtiri Res. Sc. College
Aizawl

Countersigned by,


(Dr. RICKY LALHMANGAIHZUALA)

Head of Department
Department of Electronics
Govt. Zirtiri Res. Sc. College
Aizawl

Head
Dept. of Electronics
Govt. Zirtiri Res. Science College
Aizawl: Mizoram

4. F.C.Eliasa

CERTIFICATE

This is to certify that F.C. Eliasa of 5th Semester B.Sc Roll No 1907BS039, Regn No 1906374 has done the project "GSM Based Water Pump Control System" and has completed under my supervision. He has shown a satisfactory performance in his work and his conduct and his interest in this project is satisfactory.

Date: 26th October, 2021

Place: Aizawl


(Dr. RICKY LALHMANGAIHZUALA)

Supervisor,
Department of Electronics
Govt. Zirtiri Res. Sc. College
Aizawl

Countersigned by,


(Dr. RICKY LALHMANGAIHZUALA)

Head of Department
Department of Electronics
Govt. Zirtiri Res. Sc. College
Aizawl

Head
Dept. of Electronics
Govt. Zirtiri Res. Science College
Aizawl: Mizoram

5. John Lalmuanpuia

CERTIFICATE

This is to certify that John Lalmuanpuia of 5th Semester B.Sc Roll No 1907BS061, Regn No 1902094 has done the project "Automatic Room Light System Using Microcontroller" and has completed under my supervision. He has shown a satisfactory performance in his work and his conduct and his interest in this project is satisfactory.

Date: 26th October, 2021

Place: Aizawl


(Dr. RICKY LALHMANGAIHZUALA)

Supervisor,
Department of Electronics
Govt. Zirtiri Res. Sc. College
Aizawl

Countersigned by,


(Dr. RICKY LALHMANGAIHZUALA)

Head of Department
Department of Electronics
Govt. Zirtiri Res. Sc. College
Aizawl

Head
Dept. of Electronics
Govt. Zirtiri Res. Science College
Aizawl: Mizoram

6. K. Thantluanga

CERTIFICATE

This is to certify that K. Thantluanga of 5th Semester B.Sc Roll No 1907BS070,
Regn No. 1902102 has done the project "Smoke Alarm" and has completed under my
supervision. He has shown a satisfactory performance in his work and his conduct and
his interest in this project is satisfactory.


Date: 26th October, 2021

Place: Aizawl


(Dr. RICKY LALHMANGAIHZUALA)

Supervisor,
Department of Electronics
Govt. Zirtiri Res. Sc. College
Aizawl

Countersigned by,


(Dr. RICKY LALHMANGAIHZUALA)
Head of Department
Department of Electronics
Govt. Zirtiri Res. Sc. College
Aizawl

Head
Dept. of Electronics
Govt. Zirtiri Res. Science College
Aizawl: Mizoram

7. Lalrosiama

CERTIFICATE

This is to certify that Lalrosiama of 5th Semester B.Sc Roll No 1907BS117, Regn No 1902146 has done the project "Quatcopter/Drone" and has completed under my supervision. He has shown a satisfactory performance in his work and his conduct and his interest in this project is satisfactory.


Date: 26th October, 2021

Place: Aizawl


(Dr. RICKY LALHMANGAIHZUALA)

Supervisor,
Department of Electronics
Govt. Zirtiri Res. Sc. College
Aizawl

Countersigned by,


(Dr. RICKY LALHMANGAIHZUALA)

Head of Department
Department of Electronics
Govt. Zirtiri Res. Sc. College
Aizawl

Head
Dept. of Electronics
Govt. Zirtiri Res. Science College
Aizawl: Mizoram

8. Lalruatsaka

CERTIFICATE

This is to certify that Lalruatsaka of 5th Semester B.Sc Roll No 1907BS122, Regn No 1902151 has done the project "Water Level Indicator" and has completed under my supervision. He has shown a satisfactory performance in his work and his conduct and his interest in this project is satisfactory.

Date: 26th October, 2021

Place: Aizawl


(Dr. RICKY LALHMANGAIHZUALA)

Supervisor,
Department of Electronics
Govt. Zirtiri Res. Sc. College
Aizawl

Countersigned by,


(Dr. RICKY LALHMANGAIHZUALA)

Head of Department
Department of Electronics
Govt. Zirtiri Res. Sc. College
Aizawl

Head
Dept. of Electronics
Govt. Zirtiri Res. Science College
Aizawl : Mizoram

9. Nelson Lalramchhana

CERTIFICATE

This is to certify that Nelson Lalramchhana of 5th Semester B.Sc Roll No 1907BS145, Regn No 1902175 has done the project "Electronic Thermometer" and has completed under my supervision. He has shown a satisfactory performance in his work and his conduct and his interest in this project is satisfactory.

Date: 26th October, 2021

Place: Aizawl


(Dr. RICKY LALHMANGAIHZUALA)

Supervisor,
Department of Electronics
Govt. Zirtiri Res. Sc. College
Aizawl

Countersigned by,


(Dr. RICKY LALHMANGAIHZUALA)

Head of Department
Department of Electronics
Govt. Zirtiri Res. Sc. College
Aizawl

Head
Dept. of Electronics
Govt. Zirtiri Res. Science College
Aizawl: Mizoram


10. Rinsangpuia

CERTIFICATE

This is to certify that Rinsangpuia of 5th Semester B.Sc Roll No 1907BS160,
Regn No 1902192 has done the project "Automatic street light using LDR" and has
completed under my supervision. He has shown a satisfactory performance in his work
and his conduct and his interest in this project is satisfactory.

Date: 26th October, 2021

Place: Aizawl


(Dr. RICKY LALHMANGAIHZUALA)

Supervisor,
Department of Electronics
Govt. Zirtiri Res. Sc. College
Aizawl

Countersigned by,


(Dr. RICKY LALHMANGAIHZUALA)

Head of Department
Department of Electronics
Govt. Zirtiri Res. Sc. College
Aizawl

Head
Dept. of Electronics
Govt. Zirtiri Res. Science College
Aizawl: Mizoram

11. Vanlalmuanzuala

GS

CERTIFICATE

C

This is to certify that Vanlalmuanzuala of 5th Semester B.Sc Roll No 1907BS181,
Regn No 1902214 has done the project "Solar power bank" and has completed under my
supervision. He has shown a satisfactory performance in his work and his conduct and
his interest in this project is satisfactory.

Date: 26th October, 2021

Place: Aizawl


(Dr. RICKY LALHMANGAIHZUALA)

Supervisor,
Department of Electronics
Govt. Zirtiri Res. Sc. College
Aizawl

Countersigned by,


(Dr. RICKY LALHMANGAIHZUALA)

Head of Department
Department of Electronics
Govt. Zirtiri Res. Sc. College
Aizawl

Head
Dept. of Electronics
Govt. Zirtiri Res. Science College
Aizawl: Mizoram

12. Vanmalsawma

CERTIFICATE

This is to certify that Vanmalsawma of 5th Semester B.Sc Roll No 1907BS186, Regn. No 1902219 has done the project "Solar Inverter" and has completed under my supervision. He has shown a satisfactory performance in his work and his conduct and his interest in this project is satisfactory.

Date: 26th October, 2021

Place: Aizawl


(Dr. RICKY LALHMANGAIHZUALA)

Supervisor,
Department of Electronics
Govt. Zirtiri Res. Sc. College
Aizawl

Countersigned by,


(Dr. RICKY LALHMANGAIHZUALA)

Head of Department
Department of Electronics
Govt. Zirtiri Res. Sc. College
Aizawl

Head
Dept. of Electronics
Govt. Zirtiri Res. Science College
Aizawl: Mizoram

Project Phase -II: VI semester Feb – May, 2022

Project Phase -II (Feb-May, 2022) for VI semester Electronics Core students have been carried out successfully under the supervision of Dr. Lalthanpuui Khiangte. This phase of project aimed in the enhancement of students' simulation skills using state of the art software, bridging the theoretical studies and hardware implementation in the field of electronics. Due to the constraint imposed by limited computer, students were divided in 3 groups and each group were allotted projects as detailed in the following table.

Sl. No.	Roll No.	Name of student	Project work/ field study of students	Year
1	1907BS007	Beihrohrua Zawtha	Design and Simulation of FinFET using TCAD	Project Phase -II VI semester Feb – May 2022
2	1907BS117	Lalrosiama		
3	1907BS039	Fc.Eliasa		
4	1907BS061	John Lalmuanpuia		
5	1907BS011	C.Hmingchungnunga	Design and Simulation of Nanowire FET using TCAD	
6	1907BS016	C.Lalengzuali		
7	1907BS181	Vanlalmuanzuala		
8	1907BS186	Vanmalsawma		
9	1907BS070	K. Thantluanga	Design and Simulation of Highk MOSFET using TCAD	
10	1907BS122	Lalruatsaka		
11	1907BS145	Nelson lalramchhana		
12	1907BS160	Rinsangpuia		

1. Beihrohrua Zawtha 2. Lalrosiama

3

CERTIFICATE

This is to certify that the project report entitled "**Design and Simulation of FinFET using TCAD**" submitted by Beihrohrua Zawtha (Roll No-1907BS007) and Lalrosiama (Roll No-1907BS117) to the Govt. Zirtiri Residential Science College is a record of bona fide project work carried under my supervision and is worthy of consideration for the award of the degree of Bachelor of Science (Electronics) of the College.

To the best of my knowledge, the work contained in this thesis have not been submitted in part or full to elsewhere for any degree or diploma.

Date : 27/04/2022


(DR. RICKY LALTHANHAWHUAL)

Head
Dept. of Electronics
Govt. Zirtiri Resi. Science College
Aizawl, Mizoram



Dr. Lalthanpuui Khiangte
Supervisor
Assistant Professor
Department of Electronics
GZRSC, Mizoram

3. Fc. Eliasa & 4. John Lalmuanpuia

3

CERTIFICATE

This is to certify that the project report entitled "**Design and Simulation of FinFET using TCAD**" submitted by John Lalmuanpuia(Roll No-1907BS061) and Fc. Eliasa (Roll No-1907BS039) to the Govt. Zirtiri Residential Science College is a record of bona fide project work carried under my supervision and is worthy of consideration for the award of the degree of Bachelor of Science (Electronics) of the College.

To the best of my knowledge, the work contained in this thesis have not been submitted in part or full to elsewhere for any degree or diploma.

Date : 27/04/2022



Dr. Lalthanpuui Khiangte
Supervisor
Assistant Professor
Department of Electronics
GZRSC, Mizoram


(DR. RICKY LALTHAMANGAIHZUALA)

Head
Dept. of Electronics
Govt. Zirtiri Resi. Science College
Aizawl: Mizoram

5. C.Hmingchungnunga & 6. C.Lalengzuali

CERTIFICATE

This is to certify that the project report entitled "**Design and Simulation of Nanowire FET using TCAD**" submitted by C.Hmingchungnunga (Enrol. No. 1907BS011) and C.Lalengzuali (Enrol. No. 1907BS016) to the Govt. Zirtiri Residential Science College is a record of bona fide project work carried under my supervision and is worthy of consideration for the award of the degree of Bachelor of Science (Electronics) of the College.

To the best of my knowledge, the work contained in this project have not been submitted in part or full to elsewhere for any degree or diploma.

Date:27/04/2022


.....
Dr. Lalthanpuii Khiangte
Supervisor
Assistant Professor
Department of Electronics
GZRSC, Mizoram


(DR. RICKY LALHMANGAIHZUALA)

Head
Dept. of Electronics
Govt. Zirtiri Resi. Science College
Aizawl: Mizoram


7. Vanlalmuanzuala & 8. Vanmalsawma

CERTIFICATE

This is to certify that the project report entitled "**Design and Simulation of FinFET using TCAD**" submitted by Vanmalsawma (Enrol. No. 1907BS186) and Vanlalmuanzuala (Enrol. No. 1907BS181) to the Govt. Zirtiri Residential Science College is a record of bona fide project work carried under my supervision and is worthy of consideration for the award of the degree of Bachelor of Science (Electronics) of the College.

To the best of my knowledge, the work contained in this project have not been submitted in part or full to elsewhere for any degree or diploma.

Date:27/04/2022


.....
Dr. Lalthanpuii Khiangte
Supervisor
Assistant Professor
Department of Electronics
GZRSC, Mizoram


(DR. RICKY LALTHANPUII KHIANGTE)

Head
Dept. of Electronics
Govt. Zirtiri Resi. Science College
Aizawl, Mizoram

9. K. Thantluanga & 10. Lalruatsaka

CERTIFICATE

This is to certify that the project entitled "Design and simulation of high-k using TCAD" submitted by K. Thantluanga (Enrol. No. 1907BS070) and Lalruatsaka (Enrol. No. 1907BS122) to Govt. Zirtiri Residential Science College is a record of bonafide project work carried out under my supervision and is worthy of consideration for the award of the degree of Bachelor of Science (Electronics) of the College.

To the best of my knowledge, the work contained in this project report have not been submitted in part or full to elsewhere for any degree of diploma.

Dated: 27/04/2022



(DR. LALTHANPUII KHIANGTE)
Supervisor
Assistant Professor
Dept. of Electronics
GZRSC, Mizoram


(DR. RICKY LALHMANGHAHZUALA)

Head
Dept. of Electronics
Govt. Zirtiri Resi. Science College
Aizawl, Mizoram

11. Nelson Lalramchhana & 12. Rinsangpuia

CERTIFICATE

This is to certify that the project report entitled "**Design and Simulation of FHigh-k +using TCAD**" submitted by Nelson Lalramchhana (Enrol. No.1907BS145) and Rinsangpuia (Enrol. No.1907BS160) to the Govt. Ziri Residential Science College is a record of bonafide project work carried under my supervision and is worthy of consideration for the award of the degree of Bachelor of Science (Electronics) of the College.

To the best of my knowledge, the work contained in this thesis have not been submitted in part or full to elsewhere for any degree or diploma.

Date : 27/04/2022

.....

(DR. RICKY LALHIANGHIMZUALA)

Head
Govt. Ziri Residential Science College
Aizawl, Mizoram


(Dr. Lalthanpuia Khiantle)
Supervisor
Assistant Professor
Department of Electronics
GZRSC, Mizoram



Project Phase -I: V semester July – Nov, 2022

Project Phase-I (July-Nov, 2022) for Electronics Core students have been carried out successfully under the supervision of Dr. Lalrinmawia Punte. Each student was allotted a project which mainly aimed on learning and improving the design of electronics systems used in the modern computer era. Students enjoyed and keen interest towards their projects was witnessed.

Sl. No.	Roll No.	Name of student	Project work/ field study of students	Year
1	2007BS009	Benjamin Lalchhuanawma	SMPS (220V – 12V)	Project Phase - I V semester July – Nov 2022
2	2007BS102	Lallawmkima	SMPS 220V to 5V 2A DC Converter	
3	1907BS144	Malsawmdawngpuia	SMPS 220V – 12V	
4	2007BS153	Melody Zonuntluangi	Stereo amplifier of 12V using TDA2030	
5	2007BS155	Mimi Lalremruatpuii	12V LDR controlled light with auto charger circuit	
6	2007BS199	T. Lalrohlupuii	A design of stereo amplifier	
7	2007BS218	Vanlalnunpuia Varte	SMPS 220V to 5V 2A DC Converter	

1. Benjamin Lalchhuanawma

CERTIFICATE



This is to certify that the project report entitled, "SMPS(220V-12V)" submitted by **Benjamin Lalchhuanawma, R.No.2007BS009 5th Semester**, to the Govt. Zirtiri Residential Science College, Aizawl, Mizoram for the partial fulfillment of 5th Semester B.SC. Electronics is an authentic work carried out by him under my supervision and guidance. To the best of my knowledge the matter embodied in the thesis has not been submitted to any other University/Institute for the award of any degree or diploma.

Date: 9th November, 2022

(Dr. LALRINMAWIA PUNTE)
Department of Electronics
Govt. Zirtiri Residential Science College
Aizawl-769007, Mizoram.

Declaration of the Candidate

**Govt. Zirtiri Residential Science College
November, 2022**

I, Benjamin Lalchhuanawma, hereby declare that the subject matter of this project work is the record of work done by me, that the contents of this project work did not form bias of the award of any previous degree to me or to do the best of my knowledge to anybody else, and that the thesis has not been submitted by me for any research degree in any other University/Institute.

This is being submitted to the Mizoram University for the degree of Bachelor of Science in Electronics.



(BENJAMIN LALCHHUANAWMA)
Candidate



(Dr. RICKY LALHMANGAIHZUALA)
Head, Department of Electronics
Govt. Zirtiri Residential Science College



(Dr. LALRINMAWIA PUNTE)
Supervisor

Head
Dept. of Electronics
Govt. Zirtiri Resi. Science College
Aizawl: Mizoram

ABSTRACT

This project presents the design and construction of a battery charger. A battery charger is an electrical/electronic device used to put energy into a secondary cell or rechargeable battery by forcing an electric current through it.

The purpose of this project was to design, build and test a 1A smart battery charger that accurately and efficiently charges a 12V battery. The smart battery charging system integrated an AC/DC converter, a transistors switch circuit, and a DC/DC converter to charge the battery. The concepts of experimental design and simulation were observed.

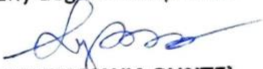
2. Lallawmawma

CERTIFICATE



This is to certify that the project report entitled, SMPS 220V AC TO 5V 2A DC CONVERTER by Lallawmkima , R.No. 2007BS102 5thSemester, Govt. Zirtiri Residential Science College, Aizawl, Mizoram for the fulfillment of 5th Semester Bachelor of Science in Electronics is an authentic work carried out by him under my supervision and guidance. To the best of my knowledge the matter embodied in the thesis has not been submitted to any other University/Institute for the award of any degree or diploma.

Date: 7th November, 2022


(Dr. LALRINMAWIA PUNTE)
Department of Electronics
Govt. Zirtiri Residential Science College
Aizawl-769008, Mizoram.

Declaration of the Candidate

Govt. Zirtiri Residential Science College
November, 2022

I, Lallawmkima, hereby declare that the subject matter of this project work is the record of work done by me, that the contents of this project work did not form bias of the award of any previous degree to me or to do the best of my knowledge to anybody else, and that the thesis has not been submitted by me for any research degree in any other University/Institute.

This is being submitted to the Mizoram University for the fulfilment of 5th semester, Bachelor of Science in Electronics.


(LAWMKIMA)
Candidate


(Dr. RICKY LALHMANGAIHZUALA)
Head
Department of Electronics
Govt. Zirtiri Residential Science College


(Dr. LALRINMAWIA PUNTE)
Supervisor

Head
Dept. of Electronics
Govt. Zirtiri Resi. Science College
Aizawl: Mizoram

ABSTRACT

This project presents the design and construction of a SMPS 220V AC to 5V 2A DC. A Switched-Mode Power Supply (SMPS) is an electronic circuit that converts power using switching devices that are turned on and off at high frequencies, and storage components such as inductors or capacitors to supply power when the switching device is in its non-conduction state.

Switching power supplies have high efficiency and are widely used in a variety of electronic equipment, including computers and other sensitive equipment requiring stable and efficient power supply.


3.Malsawmdawngpuia

CERTIFICATE



This is to certify that the project report entitled, "SMPS(220V-12V)" submitted by **Malsawmdawngpuia, R.No.2007BS144 5th Semester**, to the Govt. Zirtiri Residential Science College, Aizawl, Mizoram for the partial fulfillment of 5th Semester B.SC. Electronics is an authentic work carried out by him under my supervision and guidance. To the best of my knowledge the matter embodied in the thesis has not been submitted to any other University/Institute for the award of any degree or diploma.

Date: 9th November, 2022


(Dr. LALRINMAWIA PUNTE)
Department of Electronics
Govt. Zirtiri Residential Science College
Aizawl-769007, Mizoram.


Declaration of the Candidate

**Govt. Zirtiri Residential Science College
November, 2022**

I, Malsawmdawngpuia, hereby declare that the subject matter of this project work is the record of work done by me, that the contents of this project work did not form bias of the award of any previous degree to me or to do the best of my knowledge to anybody else, and that the thesis has not been submitted by me for any research degree in any other University/Institute.

This is being submitted to the Mizoram University for the degree of Bachelor of Science in Electronics.

**(MALSAWMDAWNGPUIA)
Candidate**


**(Dr. RICKY LALMANGAIHZUALA)
Head, Department of Electronics
Govt. Zirtiri Residential Science College**

Head
Dept. of Electronics
Govt. Zirtiri Res. Science College
Aizawl: Mizoram


**(Dr. LALRINMAWIA PUNTE)
Supervisor**

ABSTRACT

This project presents the design and construction of a battery charger. A battery charger is an electrical/electronic device used to put energy into a secondary cell or rechargeable battery by forcing an electric current through it.

The purpose of this project was to design, build and test a 1A smart battery charger that accurately and efficiently charges a 12V battery. The smart battery charging system integrated an AC/DC converter, a transistors switch circuit, and a DC/DC converter to charge the battery. The concepts of experimental design and simulation were observed.

4. Melody Zonuntluangi

CERTIFICATE



This is to certify that the project report entitled, "Stereo Amplifier" submitted by Melody Zonuntluangi, R.No2007BS153 5th Semester, to the Govt. Zirtiri Residential Science College, Aizawl, Mizoram for the partial fulfillment of the requirements for the award of the degree of Bachelor of Science in Electronics is an authentic work carried out by him under my supervision and guidance. To the best of my knowledge the matter embodied in the thesis has not been submitted to any other University/Institute for the award of any degree or diploma.

Date : 7th November, 2022

(Dr. LALRINMAWIA PUNTE)
Department of Electronics
Govt. Zirtiri Residential Science College

Declaration of the Candidate

Govt. Zirtiri Residential Science College

November, 2022

I, Melody Zonuntluangi, hereby declare that the subject matter of this project work is the record of work done by me, that the contents of this project work did not form bias of the award of any previous degree to me or to do the best of my knowledge to anybody else, and that the thesis has not been submitted by me for any research degree in any other University/Institute.

This is being submitted to the Mizoram University for the degree of Bachelor of Science in Electronics.



(MELODY ZONUNTLUANGI)
Candidate



(Dr. LALRINMAWIA PUNTE)
Supervisor



Dr. RICKY LAHMANGAIHZUALA)
Head

Department of Electronics
Govt. Zirtiri Residential Science College

Head
Dept. of Electronics
Govt. Zirtiri Resi. Science College
Aizawl: Mizoram

ABSTRACT

This project presents the design and construction of a stereo amplifier. Stereo amplifiers are one of the most popular ways of improving the sound quality in different situations and conditions. They can be used at home or office and they can amplify the signal coming from CD and DVD players, TVs, etc.

The purpose of this project was to design, build and test a 12V Stereo Amplifier using

5. Mimi Lalremruatpuii

CERTIFICATE



This is to certify that the project report entitled, "**12V LDR CONTROLLED LIGHT WITJ AUTO CHARGER**" submitted by **Mimi lalremruatpuii R.No.2007BS155 5th Semester**, to the Govt. Zirtiri Residential Science College, Aizawl, Mizoram for the partial fulfillment of therequirements for the award of the degree of Bachelor of Science in Electronics is an authentic work carried out by him under my supervision and guidance. To the best of my knowledge the matter embodied in the thesis has not been submitted to any other University/Institute for the award of any degree or diploma.

Date: 7th November, 2022



(Dr. LALRINMAWIA PUNTE)

Department of Electronics
Govt.Zirtir Residential Science College
Aizawl-769007,Mizoram

Declaration of the Candidate


**Govt. Zirtiri Residential Science College
November, 2022**

I, Mimi Lalremruatpui hereby declare that the subject matter of this project work is the record of work done by me, that the contents of this project work did not form bias of the award of any previous degree to me or to do the best of my knowledge to anybody else, and that the thesis has not been submitted by me for any research degree in any other University/Institute.

This is being submitted to the Mizoram University for the degree of Bachelor of Science in Electronics.



**(MIMI LALREM RUATPUI)
Candidate**



**(Dr. RICKY LALHMANGAIHZUALA)
Head Department of Electronics
Govt. Zirtiri Residential Science College**

Head
Dept. of Electronics
Govt. Zirtiri Resi. Science College
Aizawl: Mizoram



**(Dr. LALRINMAWIA PUNTE)
Supervisor**

ABSTRACT

This project presents the design and construction of automatic day night on of garden street porch light. Using ldr sensing,.

The purpose of this project was to design ,build and test a 12v ldr controlled light .This simple board for use as dusk to dawn light or emergency light 12v operation can be used with solar panels. Sensitivity of the ldr can be adjusted via preset .Ultra compact PCB size just 9cmx4cm .Battery support -12volts .Transformer required -0-15vac 12Amps solar panel -12volts 5-20watts Standard components.

6. T. Lalrohlupuii

CERTIFICATE



This is to certify that the project report entitled, "STEREO AMPLIFIER" submitted by **T.Lalrohlupuii, R.No.2007BS1995th** Semester, to the Govt. Zirtiri Residential Science College, Aizawl, Mizoram for the partial fulfillment of 5th Semester B.Sc Electronics is an authentic work carried out by him under my supervision and guidance. To the best of my knowledge the matter embodied in the thesis has not been submitted to any other University / Institute.

Date: 14th November, 2022



(Dr. LALRINMAWIA PUNTE)
Department of Electronics
Govt. Zirtiri Residential Science College
Aizawl-769007, Mizoram.

Declaration of the Candidate

**Govt. Zirtiri Residential Science College
November, 2022**

I, T. Lalrohlupuii, hereby declare that the subject matter of this project work is the record of work done by me, that the contents of this project work did not form bias of the award of any previous degree to me or to do the best of my knowledge to anybody else, and that the thesis has not been submitted by me for any research degree in any other University/Institute.

This is being submitted to the Mizoram University for the degree of Bachelor of Science in Electronics.


(T. LALROHLUPUII)
Candidate


(Dr. RICKY LALHMANGAIHZUALA)
Head
Department of Electronics
Govt. Zirtiri Residential Science College


(Dr. LALRINMAWIA PUNTE)
Supervisor

Head
Dept. of Electronics
Govt. Zirtiri Resi. Science College
Aizawl, Mizoram

ABSTRACT

This project presents the design and construction of a stereo amplifier . A stereo amplifier is an electronic amplifier that amplifies low-power electronic audio signals, to a level that is high enough for driving loudspeakers or headphones.

The purpose of this project was to design, build and test a 12V audio amplifier using TDA 2030.

7. Vanlalnunpuia Varte

CERTIFICATE



This is to certify that the project report entitled, SMPS 220V AC TO 5V 2A DC CONVERTER by Vanlalnunpuia Varte, R.No. 2007BS218 5th Semester, Govt. Zirtiri Residential Science College, Aizawl, Mizoram for the fulfillment of 5th Semester Bachelor of Science in Electronics is an authentic work carried out by him under my supervision and guidance. To the best of my knowledge the matter embodied in the thesis has not been submitted to any other University/Institute for the award of any degree or diploma.

Date : 7th November, 2022

(Dr. LALRINMAWIA PUNTE)
Department of Electronics
Govt. Zirtiri Residential Science College

Declaration of the Candidate

Govt. Zirtiri Residential Science College November, 2022

I, Vanlalnunpuia varte, hereby declare that the subject matter of this project work is the record of work done by me, that the contents of this project work did not form bias of the award of any previous degree to me or to do the best of my knowledge to anybody else, and that the thesis has not been submitted by me for any research degree in any other University/Institute.

This is being submitted to the Mizoram University for the fulfillment of 5th semester, Bachelor of Science in Electronics.



(VANLALNUNPUIA VARTE)

Candidate



(Dr. LALRINMAWIA PUNTE)

Supervisor



(Dr. RICKY LAHMANGAIHZUALA)

Head

Department of Electronics

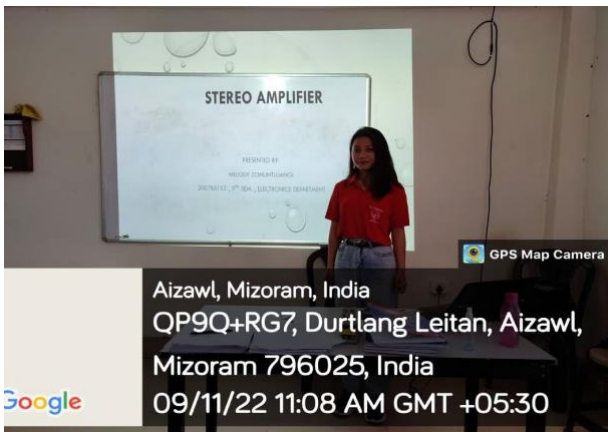
Govt. Zirtiri Residential Science College

Head
Dept. of Electronics
Govt. Zirtiri Resi. Science College
Aizawl: Mizoram

ABSTRACT

This project presents the design and construction of a SMPS 220V AC to 5V 2A DC. A Switched-Mode Power Supply (SMPS) is an electronic circuit that converts power using switching devices that are turned on and off at high frequencies, and storage components such as inductors or capacitors to supply power when the switching device is in its non-conduction state.

Switching power supplies have high efficiency and are widely used in a variety of electronic equipment, including computers and other sensitive equipment requiring stable and efficient power supply.



Department of Geology

VIRTUAL GEOLOGICAL FIELDWORK FOR THE STUDENTS (CORE) OF GEOLOGY JULY 2021 TO JUNE 2022

The Department of Geology has always shown exemplary activities and during the reporting period, despite the Covid-19 pandemic situation prevailing across the country and the state, fieldwork activities are being carried out on through virtual mode. https://youtu.be/_jCg0sE20ho



Roll No.	Name of Student
1907BS003	B. Lallianmawia
1907BS018	C.Lalneihluanga
1907BS027	Calvin Ramneihmuana
1907BS035	Dominic Lallawmawma
1907BS085	Lalhmunsanga
1907BS098	Lalmuanzela
1907BS123	Lalruatsangi