

CONVERSION OF COMPOUND FROM COMPRESSION TO INJECTION MOULDING

PROJECT REPORT

Submitted by

VINOTH.S(18UPTE002)

In partial fulfillment for the award of the degree of

BACHELOR OF TECHNOLOGY

IN

POLYMER TECHNOLOGY



**DEPARTMENT OF POLYMER TECHNOLOGY
KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY
(An Autonomous Institution - Affiliated to Anna University, Chennai)
K.VELLAKULAM - 625 701 (Near Virudhunagar)**

MAY 2022

KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY

(An Autonomous Institution- Affiliated to Anna University, Chennai)

K.VELLAKULAM - 625 701 (Near Virudhunagar)

BONAFIDE CERTIFICATE

Certifie that the project report "CONVERSION OF COMPOUND FROM COMPRESSION TO INJECTION MOULDING" is the bonafide work of "S.VINOTH(920418208020)" who carried out the project work under my supervision.



SIGNATURE

Dr.S.GANDHI, M.Sc., M.Tech., Ph.D
Associate professor,
HEAD OF THE DEPARTMENT,
Department of Polymer Technology,
Kamaraj college of Engg & Tech,
K.Vellakulam,Near Virudhunagar.



SIGNATURE

Dr.S.GANDHI,M.Sc.,M.Tech...PH.D
Associate Professor,
SUPERVISOR,
Department of Polymer Technology,
Kamaraj college of Engg & Tech,
K.Vellakulam, Near Virudhunagar.



INTERNAL EXAMINER



EXTERNAL EXAMINER



IATF16949

TAYLOR RUBBER PVT. LTD.,

Plot No. 283, SIDCO Industrial Estate, Thirumudivakkam, Chennai - 600 044.

Phone : 0091 - 44 - 4242 9292 / 4242 9283

E-mail : info@taylorryubber.com, nrs@taylorryubber.com.

Website : www.taylorryubber.com * GST No : 33AABCT0089N1Z5

TAYLORS

TO WHOM IT MAY CONCERN

This is to certify that **Mr S.VINOTH (ID 18UPT002)**, A student of B.Tech Polymer technology **KAMARAJ COLLEGE OF ENGINEERING AND Technology**, has successfully completed the internship programme from 01 March 2022 to 25 April 2022, in our organization at **QUALITY and PRODUCTION**. During the period of internship programme with us he was found to be punctual, hard work and inquisitive.

We wish him every success in life

E. ABRAHAM NELSON

(FACTORY HEAD)



AN IATF 16949 COMPANY

**CONDUCTING POLYMERS/ 2D
NANOMATERIALS HETROSTRUCTURES FOR
ENERGY STORAGE APPLICATIONS**

PROJECT REPORT

Submitted by

**MOHAMMED KENZ K T
(920418208009)**

In partial fulfillment for the award of the degree of

**BACHELOR OF TECHNOLOGY
IN
POLYMER TECHNOLOGY**



**DEPARTMENT OF POLYMER TECHNOLOGY
KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY
(An Autonomous Institution - Affiliated to Anna University, Chennai)
K. VELLAKULAM - 625 701 (Near Virudhunagar)**

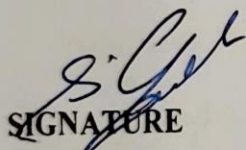
MAY 2022

KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY
(An Autonomous Institution- Affiliated to Anna University, Chennai)

KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY
(An Autonomous Institution- Affiliated to Anna University, Chennai)
K. VELLAKULAM - 625 701 (Near Virudhunagar)

BONAFIDE CERTIFICATE

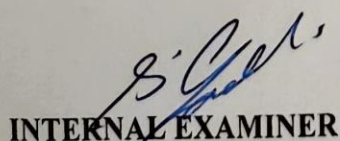
Certified that the project report “CONDUCTING POLYMERS/ 2D NANOMATERIALS HETROSTRUCTURES FOR ENERGY STORAGE APPLICATIONS” is the bonafide work of “MOHAMMED KENZ KT (920418208009) who carried out the project work under my supervision.

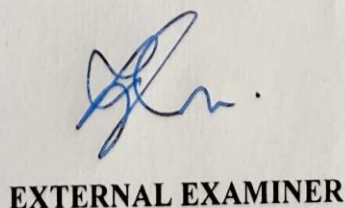

SIGNATURE

Dr. S Gandhi M.Tech., PhD.,
Head of the Department,
Associate Professor
Dept. of Polymer Technology
Kamaraj College of Engg & Tech,
K.Vellakulam, Near Virudhunagar


SIGNATURE

Dr. S Gandhi M.Tech., PhD
SUPERVISOR,
HOD and Associate Professor
Dept. of Polymer Technology
Kamaraj College of Engg & Tech,
K.Vellakulam, Near Virudhunagar


INTERNAL EXAMINER


EXTERNAL EXAMINER

CERTIFICATE

This is to certify that the dissertation entitled “**Conducting Polymer/ 2D Nanomaterials Heterostructures for Energy Storage Applications**” is a bonafide report of the project work done by **Mr. Mohammed Kenz K T** under the guidance of Dr. Chandra Sekhar Rout in the Centre for Nano and Material Sciences, Jain Deemed-to-be University, Bangalore in partial fulfilment for the award of degree in Bachelor of Technology, Polymer Technology, during the month of Feb 21st 2022 to May 05th 2022. This dissertation has not been previously submitted elsewhere.

During this period, he was punctual and took keen interest in the subject.

Project Guide.


CENTRE FOR NANO AND MATERIAL SCIENCES
JAIN UNIVERSITY
Jain Global Campus, Jakkasandra Post,
Ramanagara District - 562112
Prof. Chandra Sekhar Rout
Centre for Nano and Material Sciences (CNMS)
-Jain University, Jain Global Campus,
Bangalore-562112,India
Email: r.chandrasekhar@jainuniversity.ac.in

**DISCOVER A NEW GRADE OF RECYCLED PLASTIC MATERIAL
FOR CHAIR MANUFACTURING**

PROJECT REPORT

Submitted by

V. SANTHOSH KUMAR (920418208014)

In partial fulfillment for the award of the degree of

BACHELOR OF TECHNOLOGY

IN

POLYMER TECHNOLOGY



Department Of Polymer Technology



KAMARAJ COLLEGE OF ENGINEERING & TECHNOLOGY

(An Autonomous institution affiliated to Anna University, Chennai)

K. VELLAKULAM – 625701 (Near Virudhunagar)

MAY 2022

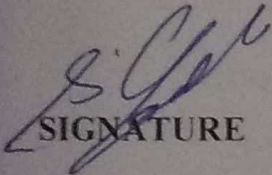
KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY

(An Autonomous institution affiliated to Anna University, Chennai)

K. VELLAKULAM – 625701 (NEAR VIRUDHUNAGAR)

BONAFIDE CERTIFICATE

Certified the project report “**DISCOVER A NEW GRADE OF RECYCLED PLASTIC MATERIAL FOR CHAIR MANUFACTURING**” is the bonafide Work of “**V. SANHTHOSH KUMAR (920418208014)**” who carried out the work under my supervision.



SIGNATURE

Dr.S.Gandhi M.Tech., Ph.D.,

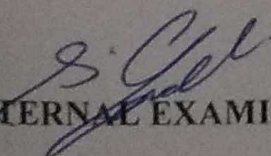
HEAD OF THE DEPARTMENT

Associate professor

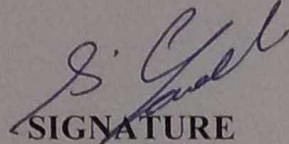
Department of Polymer Technology

Kamaraj college of Engg&Tech,

K.Vellakulam, Near Virudhunagar



INTERNAL EXAMINER



SIGNATURE

Dr. S.Gandhi M.Tech., Ph.D.,

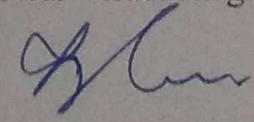
SUPERVISOR

Associate professor

Department of Polymer Technology

Kamaraj college of Engg&Tech,

K.Vellakulam, Near Virudhunagar



EXTERNAL EXAMINER

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72999 97254

BOHARA PLASTICS

No: 154 Sidco Industrial Estate, Thirumazhisai, Chennai -600124.

E-mail : boharaaplastics@gmail.com

02-05-2022

TO WHOSOEVER IT MY CONCERN

We are glad to inform you that V. SANTHOSH KUMAR (18UPT017) From Kamaraj College of Engineering & Technology, Virudhunagar has Successfully Completed his Industry Project From 1st March,2022 to 30th April,2022.

During the Program, his association with us was very fruitful and we wish him all the best in his future endeavours.

FOR BOHARAA PLASTICS

 **BOHARA PLASTICS**

Authorised Signatory

K. VISWANATHAN

Head of the Department

ENHANCEMENT OF PRINTING ON EPDM HOSE

PROJECT REPORT

Submitted by

HAMITH RAHMAN A (920418208005)

SWETHA M (920418208019)

YUGAN G (920418208022)

In partial fulfillment for the award of the degree of

BACHELOR OF TECHNOLOGY

IN

POLYMER TECHNOLOGY



DEPARTMENT OF POLYMER TECHNOLOGY



KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY

(An Autonomous Institution - Affiliated to Anna University, Chennai)

K.VELLAKULAM - 625 701 (Near Virudhunagar)

MAY 2022

KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY

(An Autonomous Institution- Affiliated to Anna University, Chennai)

K.VELLAKULAM - 625 701 (Near Virudhunagar)

BONAFIDE CERTIFICATE

Certified that the project report “**ENHANCEMENT OF PRINTING ON EPDM HOSE**” is the bonafide work of “**A. HAMITH RAHMAN (920418208005), M. SWETHA(920418208019) & G. YUGAN(920418208022)**” who carried out the project work under my supervision.



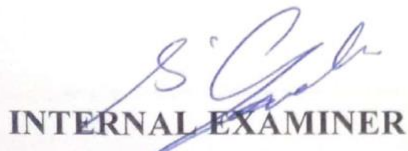
SIGNATURE

Dr.S. Gandhi M.Tech., Ph.D,
Head of the Department,
Associate professor,
Dept. of Polymer technology,
Kamaraj College of Engg & Tech,
K.Vellakulam, Near Virudhunagar



SIGNATURE

Dr.S. Gandhi M.Tech., Ph.D,
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Associate professor,
Dept. of Polymer technology,
Kamaraj College of Engg & Tech
K.Vellakulam, Near Virudhunagar



INTERNAL EXAMINER



EXTERNAL EXAMINER

30.04.2022

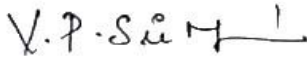
To Whomsoever It May Concern

This is to certify that **A.Hamith Rahman 18UPTE018, IV Year, B.Tech in Polymer Technology** student of **Kamaraj College of Engineering and Technology** had undergone a project in our company from **01.03.2022 to 01.05.2022** and has completed the project titled "**Enhancement of Printing on EPDM Hoses**".

During this period, his performance and conduct were found to be good.

We wish his all success in his future endeavors.

For J.K Fenner (India) Limited



V.P. Srimanivel
AGM – HR & Admin

30.04.2022

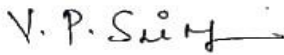
To Whomsoever It May Concern

This is to certify that **M.Swetha 18UPT010, IV Year, B.Tech in Polymer Technology** student of **Kamaraj College of Engineering and Technology** had undergone a project in our company from **01.03.2022 to 01.05.2022** and has completed the project titled "**Enhancement of Printing on EPDM Hoses**".

During this period, her performance and conduct were found to be good.

We wish her all success in her future endeavors.

For J.K Fenner (India) Limited



V.P. Srimanivel
AGM – HR & Admin



30.04.2022

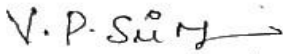
To Whomsoever It May Concern

This is to certify that G.Yugan 18UPT005, IV Year, B.Tech in Polymer Technology student of Kamaraj College of Engineering and Technology had undergone a project in our company from 01.03.2022 to 01.05.2022 and has completed the project titled "Enhancement of Printing on EPDM Hoses".

During this period, his performance and conduct were found to be good.

We wish his all success in his future endeavors.

For J.K Fenner (India) Limited



V.P. Srimanivel
AGM – HR & Admin

ok
v.k.p.
Factory & Registered Office : J.K.Fenner (India) Ltd, No. 3, Madurai - Melakkal Road, Kochadai, Madurai - 625 016.

+91 452 - 4283800 ✉ filmdu@jkenner.com 🌐 www.jkennerindia.com

CIN : U24231 TN1992PLC062306



**LEAD TIME REDUCTION IN INJECTION
MOULDING MACHINE THROUGH VALUE STREAM
MAPPING PROCESS**

PROJECT REPORT

Submitted by

ASWINRAJ R (920418208002)

KOWSHICK RAM G (920418208307)

In partial fulfillment for the award of the degree of

BACHELOR OF TECHNOLOGY

IN

POLYMER TECHNOLOGY



**DEPARTMENT OF POLYMER TECHNOLOGY
KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY
(An Autonomous Institution - Affiliated to Anna University, Chennai)
K.VELLAKULAM - 625 701 (Near Virudhunagar)**

MAY 2022

KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY
(An Autonomous Institution- Affiliated to Anna University, Chennai)
K.VELLAKULAM - 625 701 (Near Virudhunagar)

BONAFIDE CERTIFICATE

Certified that this project “**LEAD TIME REDUCTION IN INJECTION MOULDING MACHINE THROUGH VALUE STREAM MAPPING PROCESS**” is the bonafide work of ‘**R.ASWINRAJ (920418208002), G.KOWSHICK RAM (920418208307)**’ who carried out the project under my supervision.




SIGNATURE

Dr.S.GANDHI M.Tech., Ph.D.
Head of the Department,
Associate Professor,
Dept. of Polymer Technology,
Kamaraj College of Engg & Tech,
K.Vellakulam, Near Virudhunagar




SIGNATURE

Dr.Sribala.M G M.Tech., Ph.D.
SUPERVISOR,
Assistant Professor,
Dept. of Polymer Technology,
Kamaraj College of Engg & Tech,
K.Vellakulam, Near Virudhunagar



INTERNAL EXAMINER



EXTERNAL EXAMINER



Roop Polymers Ltd.

F-8/2, SIPCOT Industrial Park
Sriperumbudur - 602 105, (TN) INDIA

Tel : +044-27168030/31
CIN : U18101DL1996PLC079003

Date: 27/04/2022

TO WHOSOEVER IT MAY CONCERN

This is to certify to Mr. G. Kowshick Ram, (Reg. No. 920418208307) student of final year B. Tech in Polymer technology from Kamaraj College of Engineering Technology, Virudhunagar, has successfully completed his in plant training in our organization on "Lead Time Reduction in Injection Molding Machine through Value Streaming Mapping" from 28/02/2022 to 27/04/2022.

We wish him all the best in his future endeavors.

For Roop Polymers Ltd.

Mr. Nirmai Selvan



(Mr. Nirmai Selvan)

SGM – Operations.



Roop Polymers Ltd.

F-8/2, SIPCOT Industrial Park
Sriperumbudur - 602 105, (TN) INDIA

Tel: +044-27168030/31
CIN : U18101DL1996PLC079003

Date: 27/04/2022

TO WHOSOEVER IT MAY CONCERN

This is to certify to **Mr. R. Aswin Raj, (Reg. No. 920418208002)** student of final year **B. Tech in Polymer technology** from **Kamaraj College of Engineering Technology, Virudhunagar**, has successfully completed his in plant training in our organization on **"Lead Time Reduction in Injection Molding Machine through Value Streaming Mapping"** from **28/02/2022 to 27/04/2022**.

We wish him all the best in his future endeavors.

For Roop Polymers Ltd.



(Mr. Nermai Selvan)

SGM – Operations.

**REDUCE THE REJECTION BY MEANS FOR STUDYING THE VARIOUS
DEFECTS AND IT'S CAUSES**

PROJECT REPORT

Submitted by

ESAKKIKANNAN M (920418208003)

In partial fulfillment for the award of the degree of

BACHELOR OF TECHNOLOGY

IN

POLYMER TECHNOLOGY



**DEPARTMENT OF POLYMER TECHNOLOGY
KAMARAJ COLLEGE OF
ENGINEERING AND TECHNOLOGY**



(An Autonomous Institution - Affiliated to Anna University, Chennai)

K.VELLAKULAM - 625 701 (Near Virudhunagar)

MAY 2022

KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY

(An Autonomous Institution- Affiliated to Anna University, Chennai)

K.VELLAKULAM - 625 701 (Near Virudhunagar)

BONAFIDE CERTIFICATE

Certified that the project report "REDUCE THE REJECTION BY MEANS FOR STUDYING THE VARIOUS DEFECTS AND IT'S CAUSES" is the bonafide work of "ESAKKIKANNAN M(920418208003)" who carried out the project work under my supervision.



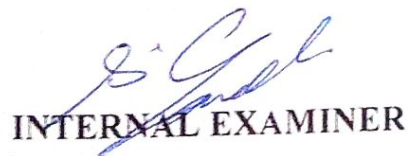
SIGNATURE

Dr.Gandhi.S. M.Tech., Ph.D.,
Head of the Department,
Associate professor,
Dept. of Polymer Technology,
Kamaraj College of Engg & Tech,
K.Vellakulam, Near Virudhunagar



SIGNATURE

Dr.Sribala.M.G. M.Tech., Ph.D.,
Supervisor,
Assistant Professor,
Dept. of Polymer Technology,
Kamaraj College of Engg &Tech,
K.Vellakulam, Near Virudhunagar



INTERNAL EXAMINER



EXTERNAL EXAMINER



Roop Polymers Ltd.

F-8/2, SIPCOT Industrial Park
Sriperumbudur - 602 105, (TN) INDIA

Tel : +044-27168030/31
CIN : U18101DL1996PLC079003

Date: 27/04/2022

TO WHOSOEVER IT MAY CONCERN

This is to certify to Mr. M. Esakkikannan, (Reg. No. 920418208003) student of final year B. Tech in Polymer technology from Kamaraj College of Engineering Technology, Virudhunagar, has successfully completed his in plant training in our organization on "Reduce the Rejection by means for Studying the Various Defects and its Causes" from 28/02/2022 to 27/04/2022.

We wish him all the best in his future endeavors.

For Roop Polymers Ltd.





(Mr. Nermai Selvan)

SGM – Operations.

**TO STUDY THE EFFECT OF TREAD GAUGE VARIATION
ON FOOTPRINT OF THE TBR TYRE**

PROJECT REPORT

Submitted by

MAHENDRAN M (920418208008)

In partial fulfillment for the award of the degree of

BACHELOR OF TECHNOLOGY

IN

POLYMER TECHNOLOGY



DEPARTMENT OF POLYMER TECHNOLOGY

KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY

(An Autonomous Institution - Affiliated to Anna University, Chennai)

K. VELLAKULAM - 625 701 (Near Virudhunagar)

MAY 2022

KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY

(An Autonomous Institution- Affiliated to Anna University, Chennai)

K.VELLAKULAM - 625 701 (Near Virudhunagar)

BONAFIDE CERTIFICATE

Certified that the project report "TO STUDY THE EFFECT OF TREAD GAUGE VARIATION ON FOOTPRINT OF THE TBR TYRE" is the bonafide work of "M. MAHENDRAN (920418208008)" who carried out the project work under my supervision.



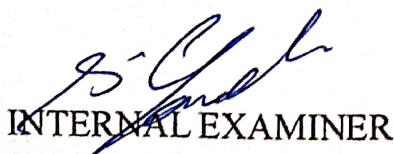
SIGNATURE

Dr.S. Gandhi M.SC., M.Tech., Ph.D.,
Head of the Department,
ASSOCIATE PROFESSOR,
Dept. of Polymer Technology,
Kamaraj College of Engg & Tech,
K.Vellakulam, Near Virudhunagar

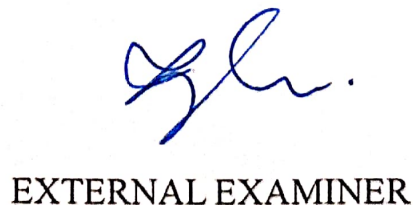


SIGNATURE

Dr.M.G. Sribala M.Tech., Ph.D.,
SUPERVISOR,
ASSISTANT PROFESSOR,
Dept. of Polymer Technology,
Kamaraj College of Engg & Tech,
K.Vellakulam, Near Virudhunagar



INTERNAL EXAMINER



EXTERNAL EXAMINER

APOLLO TYRES LTD.
GLOBAL R&D CENTRE - ASIA
B-25, Sipcot Industrial Growth Centre,
Sriperumbudur - Singaperumal
Koil State Highway, Oragadam,
Sriperumbudur Taluk,
Kanchipuram District
Tamil Nadu - 602105, India
T: +91 - 76049 62634
apolloyres.com



29th April 2022

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Mr. Mahendran M**, student of B.Tech (Polymer), Kamaraj College of Engineering and Technology, has undergone Internship in our organization from 21.02.2022 to 29.04.2022.

During his internship, he has successfully completed his project titled "**A study on the effect of Tread Gauge Variations on Foot Print of TBR Tyre**" under the guidance of Mr. Senthil Kumar Durai.

His progress during the training was Good.

We wish all success in all his future endeavors.

With Best wishes

A handwritten signature in black ink, appearing to read 'Vasanth Babu', written over a white background.

Vasanth Babu
Manager -Human Resources

**TO IMPROVE CARBON BLACK DISPERSION IN SIDEWALL
COMPOUND**

PROJECT REPORT

Submitted by

PRAMMANAYAGAM. S (Register No. 920418208011)

SIVA SANKARAN. S (Register No. 920418208017)

In partial fulfilment of the requirements for the award of the degree of

BACHELOR OF TECHNOLOGY

IN

POLYMER TECHNOLOGY



DEPARTMENT OF POLTYMER TECHNOLOGY



KAMARAJ COLLEGE OF ENGINERING AND TECHNOLOGY

(An Autonomous institution affiliated to Anna University, Chennai)

K. VELLAKULAM – 625701 (NEAR VIRUDHUNAGAR)

MAY 2022

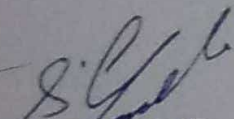
KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY

(An Autonomous institution affiliated to Anna University, Chennai)

K. VELLAKULAM – 625701 (NEAR VIRUDHUNAGAR)

BONAFIDE CERTIFICATE

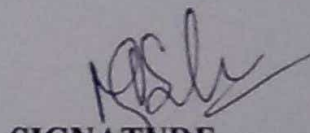
Certified that the project report "TO IMPROVE CARBON BLACK DISPERSION IN SIDEWALL COMPOUND" is the bonafide work of "S.PRAMMANAYAGAM (920418208011) &S.SIVA SANKARAN (920418208017)" who carried out the project work under my supervision.



SIGNATURE

Dr.S.GandhiM.Tech., Ph.D.,
HEAD OFTHE DEPARTMENT,

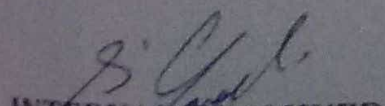
Associate professor,
Department of Polymer Technology,
Kamaraj college of Engg&Tech,
K.Vellakulam , Near Virudhunagar



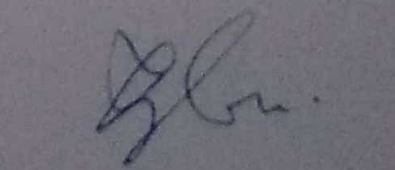
SIGNATURE

Dr.M.G.SribalaM.Tech., Ph.D.,
SUPERVISOR,

Assistant professor,
Department of Polymer Technology,
Kamaraj college of Engg&Tech,
K.Vellakulam , Near Virudhunagar



INTERNAL EXAMINER



EXTERNAL EXAMINER

Ref: ATC/TVL/TRG/22-23/03

Date: 28.04.2022

CERTIFICATE

This is to certify that **Mr.S.Prammanayagam (Reg. No. 18UPTE015)**, a student of **Final year B. Tech (Polymer Technology)** from **Kamaraj College of Engineering & Technology, Virudhunagar**, has completed his *Academic Project* at **ATC Tires Private Limited, Tirunelveli** in **MANUFACTURING TECHNOLOGY DEPARTMENT** during the period from 07.03.2022 to 28.04.2022.

During the above period, his character and conduct were good.

We wish him all success in his future endeavor.

For ATC Tires Private Limited



**R.SENTHIL,
DGM – HR & IR**



ALLIANCE GALAXY PRIMEX

ATC Tires Pvt. Ltd.

Plant: Sipcot-SEZ, Plot No. A-2, Sipcot Industrial Growth Centre, Gangaikondan, Dist. Tirunelveli, Tamil Nadu - 627 352.
Phone: +91 462 6600612 | Email: info@yokohama-oh.com

Registered Office : Unit No. 1001, 10th Floor Tower A, Embassy 247, LBS Marg, Vikhroli (West), Mumbai - 400 083
Phone: +91 22 3957 9600 | Fax: +91 22 3957 9699 | Email: info@yokohama-oh.com | CIN : U25111MH2007PTC172456

Ref: ATC/TVL/TRG/22-23/04

Date: 28.04.2022

CERTIFICATE

This is to certify that **Mr.S.Siva Sankaran (Reg. No. 18UPTE022)**, a student of *Final year B. Tech (Polymer Technology)* from **Kamaraj College of Engineering & Technology, Virudhunagar**, has completed his *Academic Project* at **ATC Tires Private Limited, Tirunelveli** in **MANUFACTURING TECHNOLOGY DEPARTMENT** during the period from 07.03.2022 to 28.04.2022.

During the above period, his character and conduct were good.

We wish him all success in his future endeavor.

For ATC Tires Private Limited



R.SENTHIL,
DGM – HR & IR



ALLIANCE GALAXY PRIMEX

ATC Tires Pvt. Ltd.

Plant: Sipcot-SEZ, Plot No. A-2, Sipcot Industrial Growth Centre, Gangaikondan, Dist. Tirunelveli, Tamil Nadu - 627 352.
Phone: +91 462 6600612 | Email: info@yokohama-oh.com

Registered Office : Unit No. 1001, 10th Floor Tower A, Embassy 247, LBS Marg, Vikhroli (West), Mumbai - 400 083
Phone: +91 22 3957 9600 | Fax: +91 22 3957 9699 | Email: info@yokohama-oh.com | CIN : U25111MH2007PTC172456

CORE PIN DAMAGE IN INJECTION MOULDING

PROJECT REPORT

Submitted by

AATHI VISHNU M (920418208001)

In partial fulfillment for the award of the degree of

BACHELOR OF TECHNOLOGY

IN

POLYMER TECHNOLOGY



DEPARTMENT OF POLYMER TECHNOLOGY



KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY

(An Autonomous Institution - Affiliated to Anna University, Chennai)

K.VELLAKULAM - 625 701 (Near Virudhunagar)

MAY 2022

KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY
(An Autonomous Institution- Affiliated to Anna University, Chennai)
K.VELLAKULAM - 625 701 (Near Virudhunagar)

BONAFIDE CERTIFICATE

Certified that the project report "CORE PIN DAMAGE IN INJECTION
MOULDING" is the bonafide work of "M. AATHI VISHNU (18UPTE021)"
who carried out the project work under my supervision.



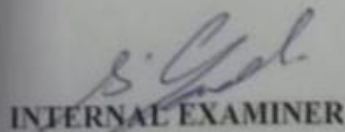
SIGNATURE

Dr.S.Gandhi M.Tech.,Ph.D
Head of the Department,
Associate professor,
Dept. of Polymer Technology,
Kamaraj College of Engg & Tech,
K.Vellakulam, Near Virudhunagar

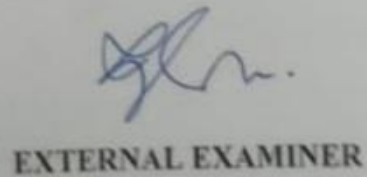


SIGNATURE

Dr.M.G.Sribala M.Tech.,Ph.D
SUPERVISOR,
Assistant professor,
Dept. of Polymer Technology,
Kamaraj College of Engg & Tech,
K.Vellakulam, Near Virudhunagar



INTERNAL EXAMINER



EXTERNAL EXAMINER



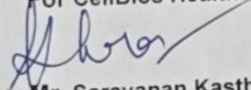
Date:05.05.2022

TO WHOM SO IT MAY CONCERN

We are glad to inform you that **Mr.M.AATHIVISHNU** (18UPT021) from Kamaraj College of Engineering and Technology ,Virdhunagar has successfully completed his industry Project from 7th March 2022 to 15th April 2022.

During the Project,his association with us was very fruitful
we wish him all the best in his future endeavours.

For CellBios Healthcare & Lifesciences Pvt Ltd


Mr. Saravanan Kasthuri
COO

CellBios Healthcare & Lifesciences Pvt. Ltd.
No. 3, Easwaran Salai, Karapakkam, Chennai-600097. INDIA
Phone : +91 44 2952 0999 / +91 99405 93332
E-mail : info@cellbios.com

CIN: U85190TN2008PTC069513 www.cellbios.com

To enrich quality of human life to live longer and happier™

**ANALYSING THE REASON FOR COLOUR
ITERATIONS IN PRECOLOUR POLYMER
COMPOUNDING MATERIAL**

PROJECT REPORT

Submitted by

J. VISHAL HARI (920418208021)

*In partial fulfillment for the award of
the degree of*

BACHELOR OF TECHNOLOGY

IN

POLYMER TECHNOLOGY



DEPARTMENT OF POLYMER TECHNOLOGY



KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY

**(An Autonomous Institution - Affiliated to Anna University,
Chennai)**

K.VELLAKULAM - 625 701 (Near Virudhunagar)

MAY 2022


**KAMARAJ COLLEGE OF ENGINEERING AND
TECHNOLOGY**

(An Autonomous Institution- Affiliated to Anna University, Chennai)

K.VELLAKULAM - 625 701 (Near Virudhunagar)

BONAFIDE CERTIFICATE

Certified that the project report "ANALYSING THE REASON FOR
COLOUR ITERATIONS IN PRECOLOUR COMPOUNDIG
MATERIAL" is the bonafide work of "J. VISHAL HARI (920418208021)"
who carried out the project work under my supervision.



SIGNATURE

Dr.S.Gandhi.M.Tech.,Ph.D.,
Head of the Department,
Associate professor,
Dept. of Polymer Technology,
Kamaraj College of Engg & Tech,
K.Vellakulam, Near Virudhunagar



SIGNATURE

Dr.R.Baskaran.M.Tech.,Ph.D
Supervisor,
Associate professor,
Dept. of Polymer Technology,
Kamaraj College of Engg & Tech.
K.Vellakulam, Near Virudhunagar



INTERNAL EXAMINER

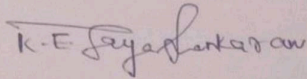


EXTERNAL EXAMINER

03rd May 2022**PROJECT COMPLETION CERTIFICATE**

This is to Certify that Mr. J Vishal Hari (Reg. 920418208021) Student of Kamaraj College of Engineering & Technology, Virudhunagar has completed a project work on the title of "Analysing the Reason for Colour Iterations in Precolour Polymer Compounding Material" during the period from 01.03.2022 to 03.05.2022.

Yours Truly,
For **KINGFA SCIENCE AND TECHNOLOGY INDIA LIMITED,**

Authorized Signatory**金发科技(印度)有限公司**KINGFA SCIENCE & TECHNOLOGY (INDIA) LIMITED
(FormerlyHydroS&SIndustriesLtd.)

CIN:L25209TN1983PLC010438

38/1,SedarapetIndustrialArea,Sedarapet,
Puducherry-605111.Email:pondyqa@kingfaindia.comRegd.Office:DhunBuilding,3rdFloor,827AnnaSalai,Chennai:600002.Tel:+44- 28521736.Fax:+44- 28520240.

PAVER BLOCK MANUFACTURE FROM RECYCLED PLASTIC

PROJECT REPORT

Submitted by

SIVAGURU V (920418208016)

ABELSAM A (920418208301)

KARTHIKEYAN R (920418208306)

UMA SHANKAR V (920418208309)

In partial fulfillment for the award of the degree of

BACHELOR OF TECHNOLOGY

IN

POLYMER TECHNOLOGY



DEPARTMENT OF POLYMER TECHNOLOGY



KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY

(An Autonomous Institution - Affiliated to Anna University, Chennai)

K.VELLAKULAM - 625 701 (Near Virudhunagar)

MAY 2022

KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY

(An Autonomous Institution- Affiliated to Anna University, Chennai)

K.VELLAKULAM - 625 701 (Near Virudhunagar)

BONAFIDE CERTIFICATE

Certified that the project report "PAVER BLOCK MANUFACTURE FROM RECYCLED PLASTIC" is the bonafide work of "SIVAGURU V (920410208001), ABELSAM A (920418208301), KARTHIKEYAN R (920418208306), UMASHANKER V (920418208309)" who carried out the project work under my supervision.



Dr.S.Gandhi M.Tech.,Ph.D.,


Head of the Department,

Associate professor,

Dept. of Polymer Technology,

Kamaraj College of Engg & Tech,

K.Vellakulam, Near Virudhunagar



SIGNATURE

Dr.R.Baskaran

Supervisor,

Associate professor,

Dept. of Polymer Technology,

Kamaraj College of Engg & Tech,

K.Vellakulam, Near Virudhunagar



INTERNAL EXAMINER



EXTERNAL EXAMINER



BESMAK
COMPONENTS PVT. LTD.

An IATF 16949:2016 Certified Company
CIN : U33112TN1994PTC028942



IATF
16949 : 2016

Date: 30.04.2022

TO WHOMSOEVER IT MAY CONCERN

This is to certify that Mr. Karthikeyan R, Roll. No. 18UPT027, B.Tech final year student of Kamaraj College of Engineering and Technology, has completed his on "Paver Block in Recycled Plastic" in our Organization from 04.03.2022 to 30.04.2022.

We wish him all the best in his future endeavors.

For BESMAK COMPONENTS PVT. LTD.,

Authorized Signatory



BESMAK
COMPONENTS PVT. LTD.

An IATF 16949:2016 Certified Company
CIN : U33112TN1994PTC028942



IATF
16949 : 2016

Date: 30.04.2022

TO WHOMSOEVER IT MAY CONCERN

This is to certify that Mr. Siva Guru V, Roll. No. 18UPTE001, B.Tech final year student of Kamaraj College of Engineering and Technology, has completed his on "Paver Block in Recycled Plastic" in our Organization from 04.03.2022 to 30.04.2022.

We wish him all the best in his future endeavors.

For BESMAK COMPONENTS PVT. LTD.,

Authorized Signatory



BESMAK
COMPONENTS PVT. LTD.

An IATF 16949:2016 Certified Company
CIN : U33112TN1994PTC028942



IATF
16949 : 2016

Date: 30.04.2022

TO WHOMSOEVER IT MAY CONCERN

This is to certify that Mr. Abel Sam A, Roll. No. 18UPTE028, B.Tech final year student of Kamaraj College of Engineering and Technology, has completed his on "Paver Block in Recycled Plastic" in our Organization from 04.03.2022 to 30.04.2022.

We wish him all the best in his future endeavors.

For BESMAK COMPONENTS PVT. LTD.,

Authorized Signatory



BESMAK
COMPONENTS PVT. LTD.

An IATF 16949:2016 Certified Company
CIN : U33112TN1994PTC028942



IATF
16949 : 2016

Date: 30.04.2022

TO WHOMSOEVER IT MAY CONCERN

This is to certify that Mr. Uma Shankar V, Roll. No. 18UPT026, B.Tech final year student of Kamaraj College of Engineering and Technology, has completed his Project on "Paver Block in Recycled Plastic" in our Organization from 04.03.2022 to 30.04.2022.

We wish him all the best in his future endeavors.

For BESMAK COMPONENTS PVT. LTD.,

Authorized Signatory

PRODUCT OPTIMIZATION & COST REDUCTION

PROJECT REPORT

Submitted by

MAHENDRAKUMAR.K (920418208007)

SHAJIDUR RAHIM (920418208015)

In partial fulfillment for the award of the degree of

BACHELOR OF TECHNOLOGY

IN

POLYMER TECHNOLOGY



DEPARTMENT OF POLYMER TECHNOLOGY

KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY

(An Autonomous Institution - Affiliated to Anna University, Chennai)

K.VELLAKULAM - 625 701 (Near Virudhunagar)



MAY 2022

KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY

(An Autonomous Institution- Affiliated to Anna University, Chennai)

K.VELLAKULAM - 625 701 (Near Virudhunagar)

BONAFIDE CERTIFICATE

Certified that the project report "PRODUCT OPTIMIZATION & COST REDUCTION" is the bonafide work of "MAHENDRAKUMAR.K (920418208007) & SHAJIDUR RAHIM.S (920418208015)" who carried out the project work under my supervision.



SIGNATURE

Dr, S. Gandhi

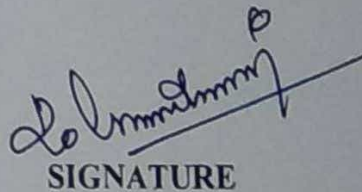
Head of the Department,

Associate Professor,

Dept. of Polymer Technology ,

Kamaraj College of Engg & Tech,

K.Vellakulam, Near Virudhunagar



SIGNATURE

Dr, R. Baskaran

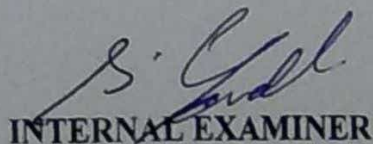
SUPERVISOR ,

Associate Professor,

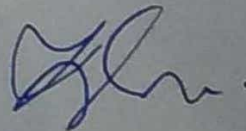
Dept. of Polymer Technology,

Kamaraj College of Engg &Tech,

K.Vellakulam, Near Virudhunagar



INTERNAL EXAMINER



EXTERNAL EXAMINER



16th April, 2022

To whomsoever it may concern

This is to certify that **Mr. Mahendra Kumar K** Reg No **18UPTE019**, Final year B.Tech student from Kamaraj college of Engineering and Technology, has done his project work titled on **“Product Optimization and Cost Reduction”** at Motherson Automotive Technologies & Engineering, Unit – III, starting from 23rd February 2022 to 16th April 2022. During his Project Work his conduct was good.

Wishing him every success.

For Motherson Automotive Technologies and Engineering
(A Division of Motherson Sumi Systems Limited)

Authorised Signatory

Motherson Automotive Technologies & Engineering (A Division of Motherson Sumi Systems Ltd.,)

Chengalpattu - Sripurumbudur Road, Pondur Village & Post, Near Sripurumbudur, Kancheepuram (Dist)-602 105, Tamil Nadu, India. Phone : 044 - 47102800 Tele. Fax : 044 - 47102801
Mumbai Office - Unit 705, C Wing, ONE BKC, E-Block, Bandra Kurla Complex, Bandra East, Mumbai - 400 051, Maharashtra (India) Ph : 022-6135 4800, Fax No. : 022 - 6135 4801 CIN NO - L34300MH1986PLC284511

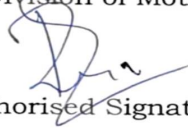
Proud to be part of samvardhana motherson

To whomsoever it may concern

This is to certify that **Mr. Shajidur Rahim S** Reg No **18UPTE009**, Final year B.Tech student from Kamaraj college of Engineering and Technology, has done his project work titled on “**Product Optimization and Cost Reduction**” at Motherson Automotive Technologies & Engineering, Unit – III, starting from 23rd February 2022 to 16th April 2022. During his Project Work his conduct was good.

Wishing him every success.

For Motherson Automotive Technologies and Engineering
(A Division of Motherson Sumi Systems Limited)



Authorised Signatory

Motherson Automotive Technologies & Engineering (A Division of Motherson Sumi Systems Ltd.,)

Chengalpattu - Sripurumbudur Road, Pondur Village & Post, Near Sripurumbudur, Kancheepuram (Dist)-602 105, Tamil Nadu, India. Phone : 044 - 47102800 Tele. Fax : 044 - 47102801
Regd. Office Unit - 705, C Wing, ONE BKC, G Block, Bandra Kurla Complex, Bandra East, Mumbai - 400 051, Maharashtra (India) Ph: 022-6135 4800, Fax No.: 022 - 6135 4801 CIN NO - L34300MH1986PLC284510

Proud to be part of samvardhana motherson 

CYCLE TIME REDUCTION FOR CAR DOOR HANDLE LH/RH

PROJECT REPORT

Submitted by

DINESH BABU.P (920418208303)

EZHIL.S (920418208304)

In partial fulfillment for the award of the degree of

BACHELOR OF TECHNOLOGY

IN

POLYMER TECHNOLOGY



DEPARTMENT OF POLYMER TECHNOLOGY

KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY

(An Autonomous Institution - Affiliated to Anna University, Chennai)

K.VELLAKULAM - 625 701 (Near Virudhunagar)

MAY 2022

KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY
(An Autonomous Institution Affiliated to Anna University, Chennai)
K.VELLAKULLAM – 625 701 (Near Virudhunagar)

BONAFIDE CERTIFICATE

Certified that this project report “CYCLE TIME REDUCTION FOR CAR DOOR HANDLE LH/RII” is the bonofide work of “DINESH BABU.P (920418208304) EZHIL.S (920418208304)” who carried out of the work under my supervision.



SIGNATURE

Dr.S GANDHI ,M.Tech., Ph.D,
HEAD OF THE DEARTMENT
Associate Professor ,
Dept. of Polymer Technology
Kamaraj College of Engg. & Tech.
K.Vellakulam ,Near Virudhunagar

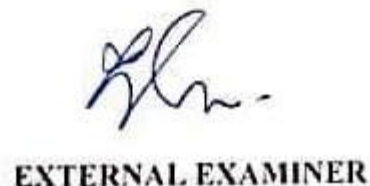


SIGNATURE

Dr.R.BASKARAN M.Tech.,Ph.D
SUPERVISOR
Associate Professor,
Dept. of Polymer Technology
Kamaraj College of Engg. & Tech.
K.Vellakulam ,Near Virudhunagar



INTERNAL EXAMINER



EXTERNAL EXAMINER

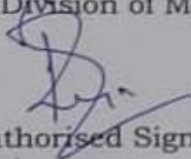
16th April, 2022

To whomsoever it may concern

This is to certify that **Mr. Dinesh Babu P** Reg No **18UPTE030**, Final year B.Tech student from Kamaraj college of Engineering and Technology, has done his project work titled on "**Cycle Time Reduction**" at Motherson Automotive Technologies & Engineering, Unit - III, starting from 23rd February 2022 to 16th April 2022. During his Project Work his conduct was good.

Wishing him every success.

For Motherson Automotive Technologies and Engineering
(A Division of Motherson Sumi Systems Limited)



Authorised Signatory

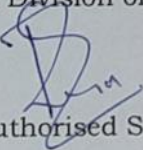
16th April, 2022

To whomsoever it may concern

This is to certify that **Mr. Ezhil S** Reg No **18UPTE029**, Final year B.Tech student from Kamaraj college of Engineering and Technology, has done his project work titled on "**Cycle Time Reduction**" at Motherson Automotive Technologies & Engineering, Unit - III, starting from 23rd February 2022 to 16th April 2022. During his Project Work his conduct was good.

Wishing him every success.

For Motherson Automotive Technologies and Engineering
(A Division of Motherson Sumi Systems Limited)


Authorised Signatory

Motherson Automotive Technologies & Engineering (A Division of Motherson Sumi Systems Ltd.)

Chengalpattu - Sriperumbudur Road, Pondur Village & Post, Near Sriperumbudur, Kancheepuram (Dist)-602 105, Tamil Nadu, India. Phone : 044 - 47102800 Tele. Fax : 044 - 47102801
Regd. Office : Unit -705, C Wing, ONE BKC, G Block, Bandra Kurla Complex, Bandra East, Mumbai - 400 051, Maharashtra (India) Ph : 022-6135 4800, Fax No. : 022 - 6135 4801 CIN NO - L34300MH1986PLC284510

DEVELOPMENT OF THIGHPAD RUBBER

PROJECT REPORT

Submitted by

G.JOTHIMANI (920418208006)

M.SANTHOSH KUMAR (920418208013)

In partial fulfillment for the award of the degree of

BACHELOR OF TECHNOLOGY

IN

POLYMER TECHNOLOGY



DEPARTMENT OF POLYMER TECHNOLOGY



KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY

(An Autonomous Institution - Affiliated to Anna University, Chennai)

K.VELLAKULAM - 625 701 (Near Virudhunagar)

MAY 2022

KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY

(An Autonomous Institution - Affiliated to Anna University, Chennai)

K.VELLAKULAM - 625 701 (Near Virudhunagar)

BONAFIDE CERTIFICATE

Certified that the project report “**DEVELOPMENT OF THIGHPAD RUBBER**” is the bonafide work of “**SANTHOSH KUMAR.M(920418208012), JOTHIMANI.G(920418208006)**”who carried out the work under my supervision.



SIGNATURE

Dr. S. Gandhi

Head of the Department,

Associate Professor,

Dept. of Polymer Technology ,

Kamaraj College of Engg & Tech,

K.Vellakulam, Near Virudhunagar .



SIGNATURE

Er. S. Sivakumaravel

SUPERVISOR ,

Assistant Professor,

Dept. of Polymer Technology,

Kamaraj College of Engg &Tech,

K.Vellakulam, Near Virudhunagar.



INTERNAL EXAMINER



EXTERNAL EXAMINER



Roop Polymers Ltd.

F-8/2, SIPCOT Industrial Park
Sriperumbudur - 602 105, (TN) INDIA

Tel : +044-27168030/31
CIN : U18101DL1996PLC079003

Date: 27/04/2022

TO WHOSOEVER IT MAY CONCERN

This is to certify to Mr. M. Santhosh Kumar, (Reg. No. 9204418208013) student of final year B. Tech in Polymer technology from Kamaraj College of Engineering Technology, Virudhunagar, has successfully completed his in plant training in our organization on "Development of thigh pad Rubber" from 28/02/2022 to 27/04/2022.

We wish him all the best in his future endeavors.

For Roop Polymers Ltd



(Mr. Nermai Selvan)

SGM – Operations.



Registered Office Address : 1st Floor, Hasan Building, Near Minerva Cinema, Kashmere Gate, Delhi - 110006
Corporate Office : Plot No. 30, Sector-03, IMT Manesar, Gurgaon - 122 050 (Hr.) INDIA
www.rooppolymers.com • sales@rooppolymers.com



Roop Polymers Ltd.

F-8/2, SIPCOT Industrial Park
Sriperumbudur - 602 105, (TN) INDIA

Tel : +044-27168030/31
CIN : U18101DLT996PLC079003

Date: 27/04/2022

TO WHOSOEVER IT MAY CONCERN

This is to certify to Mr. G. Jothamani, (Reg. No. 920418208006) student of final year B. Tech in Polymer technology from Kamaraj College of Engineering Technology, Virudhunagar, has successfully completed his in plant training in our organization on "Development of Thigh Pad Rubber" from 28/02/2022 to 27/04/2022.

We wish him all the best in his future endeavors.

For Roop Polymers Ltd.



(Mr. Nermai Selvan)

SGM – Operations.



RECYCLING OF THERMOPLASTIC OLEFIN

PROJECT REPORT

Submitted by

G. BHUVANESHWARAN (920418208302)

In partial fulfilment for the award of the degree of

BACHELOR OF ENGINEERING

IN

POLYMER TECHNOLOGY



DEPARTMENT OF POLYMER TECHNOLOGY

KAMARAJ COLLEGE OF ENGINEERING & TECHNOLOGY

(An Autonomous institution affiliated to Anna University, Chennai)

K.VELLAKULAM– 625701 (Near Virudhunagar)

MAY 2022

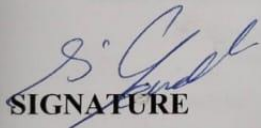
KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY

(An Autonomous institution affiliated to Anna University, Chennai)

K.VELLAKULAM – 625701 (NEAR VIRUDHUNAGAR)

BONAFIDE CERTIFICATE

Certified that this report“ **RECYCLING OF THERMOPLASTIC OLEFINs** the bonafide work of **G.BHUVANESHWARAN (920418208302)** who carried out the work under my supervision.



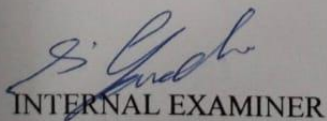
SIGNATURE

Dr. S. Gandhi M.Tech, Phd
Head of the Department,
Associate Professor
Dept. of Polymer Technology
Kamaraj College of Engg& Tech,
K.Vellakulam, NearVirudhunagar

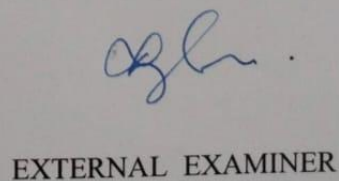


SIGNATURE

Er.S.SivakumaravelM.Tech
supervisor ,
Assistant Professor,
Dept. of Polymer Technology
Kamaraj College of Engg&Tech
K.Vellakulam, NearVirudhunagar



INTERNAL EXAMINER



EXTERNAL EXAMINER

Date: 10.05.2022

TO WHOSOEVER IT MAY CONCERN

We are glad to inform you that G.Bhuvaneshwaran (18UPTTE024) from Kamaraj College of Engineering & Technology, Virudhunagar has successfully completed his Industry Project From 14March,2022 to 30April,2022.

During the Program, his association with us was very fruitful and we wish him all the best In his Future endeavours.

For ARKA OPERATIONS PRIVATE LIMITED


Authorised Signatory

V. Manikandan
ADMIN



**COMPARISON STUDY BETWEEN THE FAP's MADE BY CO-BONDING
AND CO-CURING METHODOLOGY**

PROJECT REPORT

Submitted by

SRIVIKA R (920418208018)

MANIKANDAN J (920418208308)

NAVEEN KUMAR P (920418208010)

In partial fulfillment for the award of the degree of

BACHELOR OF TECHNOLOGY

IN

POLYMER TECHNOLOGY



DEPARTMENT OF POLYMER TECHNOLOGY



**KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY
(An Autonomous Institution - Affiliated to Anna University, Chennai)**

K. VELLAKULAM - 625 701 (Near Virudhunagar)

MAY 2022

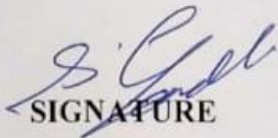
KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY

(An Autonomous Institution- Affiliated to Anna University, Chennai)

K.VELLAKULAM - 625 701 (Near Virudhunagar)

BONAFIDE CERTIFICATE

Certified that the project report “ **COMPARISION STUDY BETWEEN THE FAP’S MADE BY CO-BONDING AND CO-CURING METHODOLOGY**” is the bonafide work of “ **SRIVIKA. R (920418208018), MANIKANDAN. J (920418208308), NAVEEN KUMAR. P(9204182010)**” who carried out project under my supervision.



SIGNATURE

Dr.S.Gandhi M.Tech.,Ph.D.,

Head of the Department,

Associate professor,

Dept. of Polymer Technology

Kamaraj College of Engg. & Tech,

K.Vellakulam, Near Virudhunagar



SIGNATURE

Dr.K.Ponprakaran M.Tech.,Ph.D.,

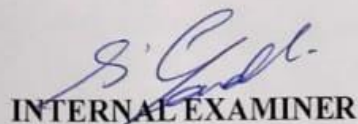
Supervisor,

Assistant professor,

Dept. of Polymer Technology,

Kamaraj College of Engg. & Tech,

K.Vellakulam, Near Virudhunagar



INTERNAL EXAMINER



EXTERNAL EXAMINER



April, 29th 2022

TO WHOMSOEVER IT MAY CONCERN

This is certify that Ms. Srivika R (Reg. No. 18UPTE020) of Kamaraja College of Engineering and Technology – Tamilnadu. She has joined as Intern and completed major project in “Comparison study between FAP's made by co-bonding and co-curing Methodology” at TATA Advanced Systems Limited, Bengaluru from 01st March, 2022 to 29th April, 2022 under the guidance of Mr. Jeyaraj Timothy H – Senior Manager – Manufacturing Engineering.

Her character and conduct is satisfactory. We wish her all the best in his future endeavour.

Girish Kumar
Senior Manager – HR

✓

Jeyaraj Timothy H
Senior Manager – ME

TATA ADVANCED SYSTEMS LIMITED

10, Jigani Industrial Area, Jigani, Bengaluru-560 105, Karnataka India

Tel +91 80 6695 5500 Fax +91 80 6695 5555 Website : www.tataadvancedsystems.com Email : email@tataadvancedsystems.com CIN : U72900TG2006PLC077939
Registered Office :- Hardware Park, Plot No 21, SY No 1/1, Imarat Kancha, Raviriyala Village, Maheshwaram Mandal, Hyderabad-501218, Telangana India



April, 29th 2022

TO WHOMSOEVER IT MAY CONCERN

This is certify that **Mr. Naveen Kumar P (Reg. No. 18UPT008) of Kamaraja College of Engineering and Technology – Tamilnadu**. He has joined as Intern and completed major project in “**Comparison study between FAP's made by co-bonding and co-curing Methodology**” at TATA Advanced Systems Limited, Bengaluru from **01st March, 2022 to 29th April, 2022** under the guidance of **Mr. Jeyaraj Timothy H – Senior Manager – Manufacturing Engineering**.

His character and conduct is satisfactory. We wish him all the best in his future endeavour.

Girish Kumar
Senior Manager – HR

Jeyaraj Timothy H
Senior Manager – ME

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Registered Office – Hardware Park, Plot No 21, SY No 1/1, Imarat Kancha, Raviryala Village, Maheshwaram Mandal, Hyderabad-501215, Telangana India.



April, 29th 2022

TO WHOMSOEVER IT MAY CONCERN

This is certify that **Mr. Manikandan J (Reg. No. 18UPT025)** of **Kamaraja College of Engineering and Technology – Tamilnadu**. He has joined as Intern and completed major project in **“Comparison study between FAP's made by co-bonding and co-curing Methodology”** at TATA Advanced Systems Limited, Bengaluru from **01st March, 2022 to 29th April, 2022** under the guidance of **Mr. Jeyaraj Timothy H – Senior Manager – Manufacturing Engineering**.

His character and conduct is satisfactory. We wish him all the best in his future endeavour.

Girish Kumar
Senior Manager – HR

Jeyaraj Timothy H
Senior Manager – ME

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Registered Office :- Hardware Park, Plot No 21, SY No 1/1, Imarat Kanchara, Raviriyala Village, Maheshwaram Mandal, Hyderabad-501218, Telangana India

**ELECTRICAL VEHICLE BATTERY ENCLOSURE
APPLICATION**

PROJECT REPORT

Submitted by

GOPI G (920418208305)

*In partial fulfillment for the award
of the degree of*

**BACHELOR OF TECHNOLOGY
IN
POLYMER TECHNOLOGY**



DEPARTMENT OF POLYMER TECHNOLOGY



**KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY
(An Autonomous Institution - Affiliated to Anna University, Chennai)
K.VELLAKULAM - 625 701 (Near Virudhunagar)**

MAY 2022

KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY

(An Autonomous Institution- Affiliated to Anna University, Chennai)

K.VELLAKULAM - 625 701 (Near Virudhunagar)

BONAFIDE CERTIFICATE

Certified that the project report “**ELECTRICAL VEHICLE BATTERY ENCLSOURE APPLICATION**” is the bonafide work of “**GOPI G (920418208305)**” who carried out the project work under my supervision.



SIGNATURE

Dr.S.Gandhi M.Tech,Ph.D.

Head of the Department,

Associate Professor,

Dept. of Polymer Technology ,

Kamaraj College of Engg & Tech,

K.Vellakulam, Near Virudhunagar



SIGNATURE

Dr.S.Vinayagamorthy M.Sc,Ph.D.

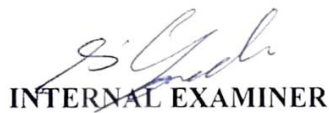
Supervisor ,

Associate Professor,

Dept. of Polymer Technology,

Kamaraj College of Engg &Tech,

K.Vellakulam, Near Virudhunagar



INTERNAL EXAMINER



EXTERNAL EXAMINER



Date : 14.04.2022

TO WHOMSOEVER IT MAY CONCERN

We are glad to inform you that **G.GOPI (920418208305)** from Kamaraj College of Engineering & Technology, Virudhunagar has successfully completed his Inplant Training on "ELECTRICAL VEHICLE BATTERY ENCLOSURE APPLICATION" from 28.02.2022 to 13.04.2022.

During the Program, his association with us was very fruitful and we wish him all the best in his future endeavors.

For Formulated Polymers Limited


P.Moovendan
Deputy Manager HR/ADMIN & TRAINING

Formulated Polymers Limited

Head Office:

57-60, SIDCO Industrial Estate, Thirumazhisai, Chennai - 600 124, India

+91 - 44 - 2681 1236 - 7 - 8 +91 - 44 - 2681 1275 info@formulatedpolymers.com

Chennai | Bengaluru | Gurgaon | Pune

CIN: U52599TN991PLCO21129

www.formulatedpolymers.com

THE MATERIAL OPTIMIZATION AND WEIGHT REDUCTION OF THE BATTERY COVER

PROJECT REPORT

Submitted by

RAMSANKAR.A.G (920418208012)

In partial fulfillment for the award of the degree of

BACHELOR OF TECHNOLOGY

IN

POLYMER TECHNOLOGY



DEPARTMENT OF POLYMER TECHNOLOGY

KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY

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K.VELLAKULAM - 625 701 (Near Virudhunagar)

MAY 2022

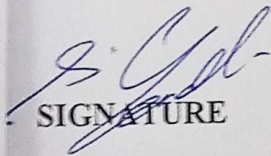
KAMARAJ COLLEGE OF ENGINEERING AND TECHNOLOGY

(An Autonomous Institution- Affiliated to Anna University, Chennai)

K.VELLAKULAM - 625 701 (Near Virudhunagar)

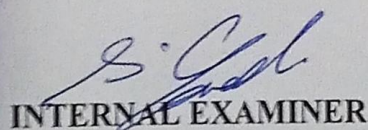
BONAFIDE CERTIFICATE

Certified that the project report "THE MATERIAL OPTIMIZATION AND WEIGHT REDUCTION OF THE BATTERY COVER" is the bonafide work of "RAMSANKAR.A.G (920418208012)" who carried out the project work under my supervision.

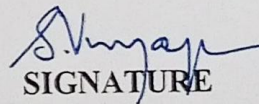


SIGNATURE

Dr.S.GANDHI,
HEAD OF THE DEPARTMENT,
Associate professor,
Dept. of Polymer Technology,
Kamaraj College of Engg & Tech,
K.Vellakulam, Near Virudhunagar.

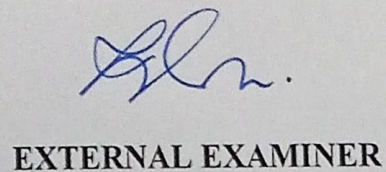


INTERNAL EXAMINER



SIGNATURE

Dr.S.VINAYAGAMOORTHY,
SUPERVISOR,
Associate professor,
Dept. of Polymer Technology,
Kamaraj College of Engg &Tech,
K.Vellakulam, Near Virudhunagar.



EXTERNAL EXAMINER



Roop Polymers Ltd.

F-8/2, SIPCOT Industrial Park
Sriperumbudur - 602 105, (TN) INDIA

Tel : +044-27168030/31
CIN : U18101DL1994PLC079003

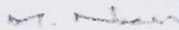
Date: 27/04/2022

TO WHOSOEVER IT MAY CONCERN

This is to certify to Mr. A. G. Ramsankar, (Reg. No. 920418208012) student of final year B. Tech in Polymer technology from Kamaraj College of Engineering Technology, Virudhunagar, has successfully completed his in plant training in our organization on "The Material Optimization and Weight Reduction of the Battery Cover" from 28/02/2022 to 27/04/2022.

We wish him all the best in his future endeavors.

For Roop Polymers Ltd.



(Mr. Nermai Selvan)

SGM - Operations.

