



# FATIMA COLLEGE

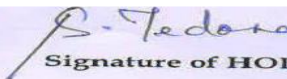
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*Affiliated to Madurai Kamaraj University*  
*Re-Accredited with 'A++' by NAAC (Cycle - IV)*  
Mary Land, Madurai - 625018, Tamil Nadu

## 2023- 24 MOU – Activity 2

- List of PG students who have done their Project in Material Research Center (Nano Center)

S.no	Reg.no	Names
1	2022MSCC02	AKILA S
2	2022MSCC04	ARULSNEHA A
3	2022MSCC05	DELICIA A
4	2022MSCC06	DEVIKA M
5	2022MSCC14	PRIYADHARSHINI.S
6	2022MSCC15	RAMYA R
7	2022MSCC17	SAKTHI PANDIMEENA N
8	2022MSCC19	SNEKA M
9	2022MSCC21	SUDARSORNALAKSHMI K
10	2022MSCC22	UDHAYA PRIYA S

  
Signature of HOD  
  
HEAD  
Department of Chemistry,  
Fatima College (Autonomous),  
Madurai - 625018



# FATIMA COLLEGE

(Autonomous)

*Affiliated to Madurai Kamaraj University*  
*Re-Accredited with 'A++' by NAAC (Cycle - IV)*  
Mary Land, Madurai - 625018, Tamil Nadu

## **Fabrication of Proton Conducting Primary Battery with Biomaterial (Cassia Auriculata) and Ammonium nitrate based membrane as an Electrolyte**

*A Project report submitted to Research Centre of Chemistry*

*FATIMA COLLEGE (Autonomous)*

*In Partial fulfilment of the requirements for the degree of*

**MASTER OF SCIENCE IN CHEMISTRY**

**S. AKILA**

(REG.NO: 2022MSCC02)



RESEARCH CENTRE OF CHEMISTRY

FATIMA COLLEGE (AUTONOMOUS)

Re - Accredited with A++ Grade by NACC

(CGPA: 3.61 in the fourth cycle)

MADURAI – 625 018

Under the guidance of

**Dr. S. SELVASEKARAPANDIAN, M.Sc., Ph.D.,**

**DIRECTOR**



MATERIALS RESEARCH CENTER

COIMBATORE – 641 045

MARCH - 2024



# FATIMA COLLEGE

(Autonomous)

*Affiliated to Madurai Kamaraj University*  
*Re-Accredited with 'A++' by NAAC (Cycle - IV)*  
Mary Land, Madurai - 625018, Tamil Nadu

## BONAFIDE CERTIFICATE

This is to certify that the project report entitled "Fabrication of proton conducting primary battery with Biomaterial (Cassia Auriculata) and Ammonium nitrate based membrane as an Electrolyte" was carried out by Ms. S. AKILA at Materials Research Center, Coimbatore under the guidance of Dr. S. SELVASEKARAPANDIAN, Director, Materials Research Center, Coimbatore & Emeritus Professor, Bharathiar University, Coimbatore and Dr. S. SUKUMARI, Associate Professor, The Research Centre of Chemistry, Fatima College, Madurai and submitted to The Research Centre of Chemistry, Fatima College, Madurai.

*S. S.*

### INTERNAL GUIDE

**Dr. S. SUKUMARI**

Associate Professor,  
The Research Centre of Chemistry,  
Fatima College,  
Madurai - 625 018

*S. Selvasekarapandian*

### EXTERNAL GUIDE

**Dr. S. SELVASEKARAPANDIAN**

Director,  
Materials Research Center,  
Coimbatore - 641 045 &  
Emeritus Professor,  
Bharathiar University,  
Coimbatore - 641 046.

*B. Medona*

### HEAD OF THE DEPARTMENT

**Dr. B. MEDONA**

Head & Associate Professor,  
The Research Centre of Chemistry,  
Fatima College,  
Madurai - 625 018.

*R. S. S.*

### EXTERNAL EXAMINAR



# FATIMA COLLEGE

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*Affiliated to Madurai Kamaraj University*  
*Re-Accredited with 'A++' by NAAC (Cycle - IV)*  
Mary Land, Madurai - 625018, Tamil Nadu

## DECLARATION

I hereby declare that this project work entitled “Fabrication of proton conducting primary battery with Biomaterial (Cassia Auriculata) and Ammonium nitrate based membrane as an Electrolyte” has been originally carried out by Ms. S. AKILA (2022MSCC02) at Materials Research Center during the academic year, 2023 – 2024 and submitted to The Research Centre of Chemistry, Fatima College, Madurai in a partial fulfilment of the requirements for the award of **MASTER OF SCIENCE IN CHEMISTRY**, I also declare that this part of work has not been published earlier elsewhere in any manner.

Place: Madurai

Date: 26/03/2024

S.AKILA

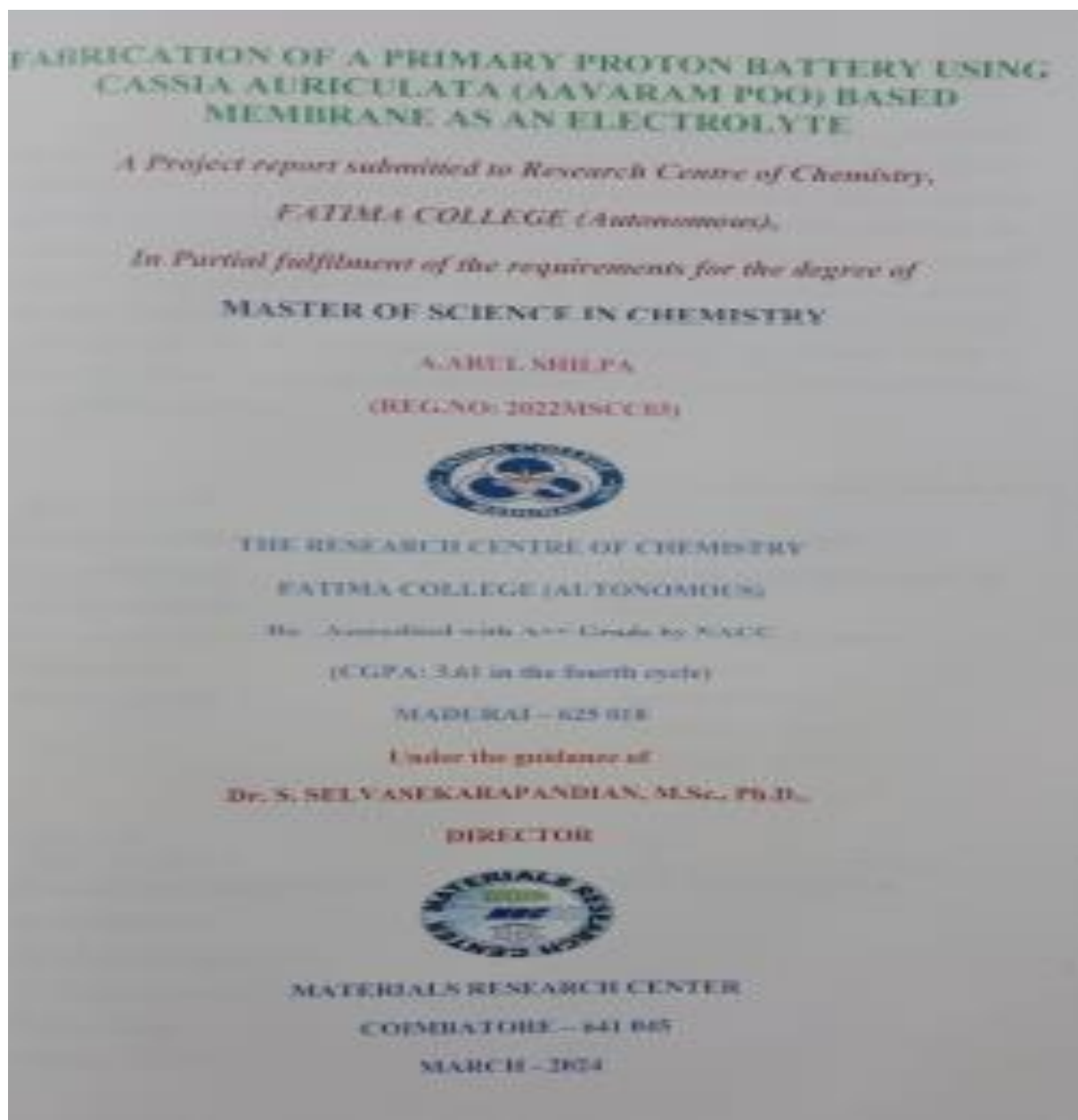
(REG. NO: 2022MSCC02)



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*Affiliated to Madurai Kamaraj University*  
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Mary Land, Madurai - 625018, Tamil Nadu





# FATIMA COLLEGE

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*Affiliated to Madurai Kamaraj University*  
*Re-Accredited with 'A++' by NAAC (Cycle - IV)*  
Mary Land, Madurai - 625018, Tamil Nadu

## BONAFIDE CERTIFICATE

This is to certify that the project report entitled "FABRICATION OF A PRIMARY PROTON BATTERY USING CASSIA AURICULATA (AAYARAM POO) BASED MEMBRANE AS AN ELECTROLYTE" submitted to Fatima College, Madurai is partial fulfillment for the award of the degree of MASTER OF SCIENCE IN CHEMISTRY. This is the record of original project work done by Ms. A. ABIL SHEEPA at Materials Research Center, Madurai under the guidance of Dr. S. SELVASEKARAPANDIAN, Director, Materials Research Center, Coimbatore and Emeritus Professor, Bharathiar University, Coimbatore and Dr. S. SUKUMARI, Associate Professor, The Research Centre of Chemistry, Fatima College, Madurai and submitted to The Research Centre of Chemistry, Fatima College, Madurai.

INTERNAL GUIDE

Dr. S. SUKUMARI

Associate Professor,

The Research Centre of Chemistry,

Fatima College,

Madurai - 625 018

EXTERNAL GUIDE

Dr. S. SELVASEKARAPANDIAN

Director,

Material Research Center,

Coimbatore &

Emeritus Professor,

Bharathiar University,

Coimbatore - 641 045

HEAD OF THE DEPARTMENT

Dr. B. MEDONA

Head and Associate professor,

The Research Centre of chemistry,

Fatima College,

Madurai - 625 018

EXTERNAL EXAMINER





# FATIMA COLLEGE

(Autonomous)

*Affiliated to Madurai Kamaraj University*  
*Re-Accredited with 'A++' by NAAC (Cycle - IV)*  
Mary Land, Madurai - 625018, Tamil Nadu

## DECLARATION

I do hereby declare that this dissertation entitled "FABRICATION OF A PRIMARY PROTON BATTERY USING CASSIA AURICULATA (AAVARAM POO) BASED MEMBRANE AS AN ELECTROLYTE" has been carried out by Ms. A. ARUL SHILPA (Reg.No: 2022MSCC03) and submitted to The Research Centre of Chemistry, Fatima College, Madurai in a partial fulfillment of the requirements for the award of MASTER OF SCIENCE IN CHEMISTRY, during the academic year, 2023-2024.

Place: Madurai

Date: 26-05-2024

*A. Arul Shilpa*  
A. ARUL SHILPA

(Reg. No: 2022MSCC03)



# FATIMA COLLEGE

(Autonomous)

*Affiliated to Madurai Kamaraj University*  
*Re-Accredited with 'A++' by NAAC (Cycle - IV)*  
Mary Land, Madurai - 625018, Tamil Nadu

## FABRICATION OF PRIMARY PROTON CONDUCTING BATTERY USING CASSIA AURICULATA (AAVARAM POO) AS BIOMATERIAL BASED ELECTROLYTE

*A Project report submitted to Research Centre of Chemistry, Fatima College  
(Autonomous), In Partial fulfilment of the requirements for the degree of*

### MASTER OF SCIENCE IN CHEMISTRY

A. ARULSNEHA

(REG.NO: 2022MSCC04)



RESEARCH CENTRE OF CHEMISTRY  
FATIMA COLLEGE (AUTONOMOUS)

Re - Accredited with A++ Grade by NACC  
(CGPA: 3.61 in the fourth cycle)

MADURAI – 625 018

Under the guidance of

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

DIRECTOR



MATERIALS RESEARCH CENTER

COIMBATORE – 641 045

MARCH - 2024





# FATIMA COLLEGE

(Autonomous)

*Affiliated to Madurai Kamaraj University*  
*Re-Accredited with 'A++' by NAAC (Cycle - IV)*  
Mary Land, Madurai - 625018, Tamil Nadu

## BONAFIDE CERTIFICATE

This is to certify that the project report entitled "FABRICATION OF PRIMARY PROTON CONDUCTING BATTERY USING CASSIA AURICULATA (AAVARAM POO) AS BIOMATERIAL BASED ELECTROLYTE" submitted to Fatima College, Madurai in partial fulfilment for the award of the degree of MASTER OF SCIENCE IN CHEMISTRY. This is the record of original project work done by **Ms. A. ARULSNEHA** at Materials Research Center, Madurai under the guidance of **Dr. S. SELVASEKARAPANDIAN**, Director, Materials Research Center, Coimbatore and Emeritus Professor, Bharathiar University, Coimbatore and **Mrs. Dr. A. RAJESWARI**, Assistant Professor, Research Centre of Chemistry, Fatima College, Madurai and submitted to Research Centre of Chemistry, Fatima College, Madurai.

INTERNAL GUIDE

**Dr. A. RAJESWARI, M.Sc., M.Phil., Ph.D.,**  
Assistant Professor,  
Research Centre of Chemistry,  
Fatima College,  
Madurai – 625 018.

EXTERNAL GUIDE

**Dr. S. SELVASEKARAPANDIAN, M.Sc., Ph.D.,**  
Director,  
Material Research Center,  
Coimbatore – 641 045 &  
Emeritus professor,  
Bharathiar University,  
Coimbatore – 641 046.

HEAD OF THE DEPARTMENT

**Dr. B. MEDONA, M.Sc., Ph.D.,**  
Head & Associate professor,  
Research Centre of Chemistry,  
Fatima College,  
Madurai – 625 018.

EXTERNAL EXAMINER



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*Affiliated to Madurai Kamaraj University*  
*Re-Accredited with 'A++' by NAAC (Cycle - IV)*  
Mary Land, Madurai - 625018, Tamil Nadu

---

## DECLARATION

I do hereby declare that this dissertation entitled "FABRICATION OF PRIMARY PROTON CONDUCTING BATTERY USING CASSIA AURICULATA (AAVARAM POO) AS BIOMATERIAL BASED ELECTROLYTE" has been carried out by Ms. A. ARULSNEHA (Reg.No:2022MSCC04) and submitted to Research Centre of Chemistry, Fatima College, Madurai in a partial fulfilment of the requirements for the award of MASTER OF SCIENCE IN CHEMISTRY, during the academic year, 2023 – 2024.

Place: Madurai

Date: 26.03.2024.

*A. Arulsneha*

A. ARULSNEHA

( Reg. No: 2022MSCC04 )



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(Autonomous)

**Affiliated to Madurai Kamaraj University**  
**Re-Accredited with 'A++' by NAAC (Cycle - IV)**  
**Mary Land, Madurai - 625018, Tamil Nadu**

## FABRICATION OF PRIMARY LITHIUM ION CONDUCTING BATTERY USING CASSIA AURICULATA (AAVARAM POO) AS BIOMATERIAL BASED ELECTROLYTE

*A Project report submitted to Research Centre of Chemistry, Fatima College  
(Autonomous), In Partial fulfilment of the requirements for the degree of*

### MASTER OF SCIENCE IN CHEMISTRY

A. DELICIA

(REG.NO: 2022MSCC05)



RESEARCH CENTRE OF CHEMISTRY

FATIMA COLLEGE (AUTONOMOUS)

Re - Accredited with A++ Grade by NACC

(CGPA: 3.61 in the fourth cycle)

MADURAI – 625 018

Under the guidance of

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

DIRECTOR



MATERIALS RESEARCH CENTER

COIMBATORE – 641 045

MARCH - 2024



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(Autonomous)

*Affiliated to Madurai Kamaraj University*  
*Re-Accredited with 'A++' by NAAC (Cycle - IV)*  
Mary Land, Madurai - 625018, Tamil Nadu

## BONAFIDE CERTIFICATE

This is to certify that the project report entitled "FABRICATION OF PRIMARY LITHIUM ION CONDUCTING BATTERY USING CASSIA AURICULATA (AAVARAM POO) AS BIOMATERIAL BASED ELECTROLYTE" submitted to Fatima College, Madurai in partial fulfilment for the award of the degree of **MASTER OF SCIENCE IN CHEMISTRY**. This is the record of original project work done by **Ms. A. DELICIA** at Materials Research Centre, Madurai under the guidance of **Dr. S. SELVASEKARAPANDIAN**, Director, Materials Research Center, Coimbatore and Emeritus Professor, Bharathiar University, Coimbatore and **Dr. A. RAJESWARI**, Assistant Professor, Research Centre of Chemistry, Fatima College, Madurai and submitted to Research Centre of Chemistry, Fatima College, Madurai.

**INTERNAL GUIDE**

**Dr. A. RAJESWARI M.Sc., M.Phil., Ph.D.,**  
Assistant Professor,  
Research Centre of Chemistry,  
Fatima College,  
Madurai – 625 018

**EXTERNAL GUIDE**

**Dr. S. SELVASEKARAPANDIAN M.Sc., Ph.D.,**  
Director,  
Material Research Center,  
Coimbatore – 641 045 &  
Emeritus professor,  
Bharathiar University,  
Coimbatore – 641 046.

**HEAD OF THE DEPARTMENT**

**Dr. B. MEDONA, M.Sc., Ph.D.,**  
Head & Associate professor,  
Research Centre of Chemistry,  
Fatima College,  
Madurai – 625 018.

**EXTERNAL EXAMINAR**



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(Autonomous)

*Affiliated to Madurai Kamaraj University*  
*Re-Accredited with 'A++' by NAAC (Cycle - IV)*  
Mary Land, Madurai - 625018, Tamil Nadu

## DECLARATION

I do hereby declare that this dissertation entitled "FABRICATION OF PRIMARY LITHIUM-ION CONDUCTING BATTERY USING CASSIA AURICULATA (AAVARAM POO) AS BIOMATERIAL BASED ELECTROLYTE" has been carried out by Ms. A . DELICIA (Reg.No:2022MSCC05) and submitted to Research Centre of Chemistry, Fatima College, Madurai in a partial fulfilment of the requirements for the award of MASTER OF SCIENCE IN CHEMISTRY, during the academic year, 2023 – 2024.

Place: Madurai

Date: 26.03.2024

A. Delicia.  
A. DELICIA

Reg. No: 2022MSCC05





# FATIMA COLLEGE

(Autonomous)

*Affiliated to Madurai Kamaraj University*  
*Re-Accredited with 'A++' by NAAC (Cycle - IV)*  
Mary Land, Madurai - 625018, Tamil Nadu

## FABRICATION OF PRIMARY LITHIUM ION CONDUCTING BATTERY USING CASSIA AURICULATA (AAYARAM POO) BASED MEMBRANE AS AN ELECTROLYTE

*A Project report submitted to Research Centre of Chemistry,  
FATIMA COLLEGE (Autonomous),  
In Partial fulfilment of the requirements for the degree of*

MASTER OF SCIENCE IN CHEMISTRY

M. DEVIKA

(REG.NO: 2022MSCC06)



RESEARCH CENTRE OF CHEMISTRY

FATIMA COLLEGE (AUTONOMOUS)

Re-Accredited with A++ Grade by NACC

(CGPA: 3.61 in the fourth cycle)

MADURAI – 625 018

Under the guidance of

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

DIRECTOR



MATERIALS RESEARCH CENTER

COIMBATORE – 641 045

MARCH - 2024





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**Affiliated to Madurai Kamaraj University**  
**Re-Accredited with 'A++' by NAAC (Cycle - IV)**  
**Mary Land, Madurai - 625018, Tamil Nadu**

## BONAFIDE CETIFICATE

This is to certify that the project report entitled “**FABRICATION OF PRIMARY LITHIUM ION CONDUCTING BATTERY USING CASSIA AURICULATA (AAVARAM POO) BASED MEMBRANE AS AN ELECTROLYTE**” submitted to Fatima College, Madurai in partial fulfilment for the award of the degree of **MASTER OF SCIENCE IN CHEMISTRY**. This is the record of original project work done by **Ms. DEVIKA** at Materials Research Center, Madurai under the guidance of **Dr. S. SELVASEKARAPANDIAN**, Director, Materials Research Center, Coimbatore and Emeritus Professor, Bharathiar University, Coimbatore and **Dr. M. PRIYADHARSANI**, Assistant Professor, Research Centre of Chemistry, Fatima College, Madurai and submitted to Research Centre of Chemistry, Fatima College, Madurai.

*M. Priyadharsani* 4/3/24

### INTERNAL GUIDE

**Dr. M. PRIYADHARSANI,**  
**M.Sc., M.Phil., SET., Ph.D.,**  
Assistant Professor,  
Research Centre of Chemistry,  
Fatima College,  
Madurai – 625 018

*S. Selvasekarapandian*

### EXTERNAL GUIDE

**Dr. S. SELVASEKARAPANDIAN,**  
**M.Sc., Ph.D.,**  
Director,  
Materials Research Center,  
Coimbatore – 641 045 &  
Emeritus Professor,  
Bharathiar University,  
Coimbatore – 641 046.

*B. Medona*

### HEAD OF THE DEPARTMENT

**Dr. B. MEDONA, M.Sc., Ph.D.,**  
Head & Associate Professor,  
Research Centre of Chemistry,  
Fatima College,  
Madurai – 625 018.

*[Signature]*

### EXTERNAL EXAMINER



# FATIMA COLLEGE

(Autonomous)

*Affiliated to Madurai Kamaraj University*  
*Re-Accredited with 'A++' by NAAC (Cycle - IV)*  
Mary Land, Madurai - 625018, Tamil Nadu

## DECLARATION

I do hereby declare that this dissertation entitled “FABRICATION OF PRIMARY LITHIUM ION CONDUCTING BATTERY USING CASSIA AURICULATA (AAVARAM POO) BASED MEMBRANE AS AN ELECTROLYTE” has been carried out by Ms. M. DEVIKA (Reg.No:2022MSCC06) and submitted to Research Centre of Chemistry, Fatima College, Madurai in a partial fulfilment of the requirements for the award of MASTER OF SCIENCE IN CHEMISTRY, during the academic year, 2023 – 2024.

Place: Madurai

Date: 26.03.2024

M. DEVIKA

(Reg. NO: 2022MSCC06)



# FATIMA COLLEGE

(Autonomous)

**Affiliated to Madurai Kamaraj University**  
**Re-Accredited with 'A++' by NAAC (Cycle - IV)**  
**Mary Land, Madurai - 625018, Tamil Nadu**

## FABRICATION OF PRIMARY MAGNESIUM ION CONDUCTING BATTERY USING CASSIA ARTICULATA (AAVARAM POO) BIOMATERIAL – BASED MEMBRANE AS AN ELECTROLYTE

*A Project report submitted to Research Centre of Chemistry,  
FATIMA COLLEGE (Autonomous),  
In Partial fulfilment of the requirements for the degree of*

**MASTER OF SCIENCE IN CHEMISTRY**

**S. PRIYADHARSHINI**

(REG.NO: 2022MSCC14)



RESEARCH CENTRE OF CHEMISTRY

FATIMA COLLEGE (AUTONOMOUS)

Re - Accredited with A++ Grade by NACC

(CGPA: 3.61 in the fourth cycle)

MADURAI – 625 018

**Under the guidance of**

**Dr. S. SELVASEKARAPANDIAN, M.Sc., Ph.D.,**

**DIRECTOR**



MATERIALS RESEARCH CENTER

COIMBATORE – 641 045

MARCH-2024



# FATIMA COLLEGE

(Autonomous)

**Affiliated to Madurai Kamaraj University**  
**Re-Accredited with 'A++' by NAAC (Cycle - IV)**  
**Mary Land, Madurai - 625018, Tamil Nadu**

## BONAFIDE CERTIFICATE

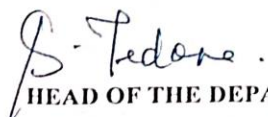
This is to certify that the project report entitled **FABRICATION OF PRIMARY MAGNESIUM ION CONDUCTING BATTERY USING CASSIA AURICULATA BIOMATERIAL – BASED MEMBRANE AS AN ELECTROLYTE** submitted to Fatima College, Madurai in partial fulfilment for the award of the degree of **MASTER OF SCIENCE IN CHEMISTRY**. This is the record of original project work done by **Ms. S. PRIYADHARSHINI** at Materials Research Centre, Madurai under the guidance of **Dr. S. SELVASEKARAPANDIAN**, Director, Materials Research Centre, Coimbatore and Emeritus Professor, Bharathiar University, Coimbatore and **Dr. Sr. JARUL MARY** Assistant Professor Research Centre of Chemistry, Fatima College, Madurai and submitted to Research Centre of Chemistry, Fatima College, Madurai.

  
INTERNAL GUIDE

**Dr. Sr. J. ARUL MARY,**  
**M.Sc., M.Phil., Ph.D.,**  
Assistant Professor,  
Research Centre of Chemistry,  
Fatima College,  
Madurai – 625 018

  
EXTERNAL GUIDE

**Dr. S. SELVASEKARAPANDIAN,**  
**M.Sc., Ph.D.,**  
Director,  
Materials Research Center,  
Coimbatore – 641045 &  
Emeritus Professor,  
Bharathiar University,  
Coimbatore – 641 046.

  
HEAD OF THE DEPARTMENT

**Dr. B. MEDONA, M.Sc., Ph.D.,**  
Associate Professor,  
Department of chemistry,  
Fatima College,  
Madurai – 625 018.

  
EXTERNAL EXAMINER



# FATIMA COLLEGE

(Autonomous)

*Affiliated to Madurai Kamaraj University*  
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Mary Land, Madurai - 625018, Tamil Nadu

---

## DECLARATION

I do hereby declare that this dissertation entitled **FABRICATION OF PRIMARY MAGNESIUM ION CONDUCTING BATTERY USING CASSIA AURICULATA BIOMATERIAL – BASED MEMBRANE AS AN ELECTROLYTE** has been carried out by **S. PRIYADHARSHINI** (Reg.No:2022MSCC14) and submitted to Research Centre of Chemistry, Fatima College, Madurai in a partial fulfilment of the requirements for the award of **MASTER OF SCIENCE IN CHEMISTRY**, during the academic year, 2023 – 2024.

Place: Madurai

Date: 26/03/2024

S. PRIYADHRASHINI

Reg. No: 2022MSCC14



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Mary Land, Madurai - 625018, Tamil Nadu

## BONAFIDE CERTIFICATE

This is to certify that the project report entitled "FABRICATION OF PRIMARY LITHIUM ION CONDUCTING BATTERY USING CASSIA AURICULATA (AVARAMPOO) BASED MEMBRANE AS AN ELECTROLYTE" submitted to Fatima College, Madurai in partial fulfilment for the award of the degree of **MASTER OF SCIENCE IN CHEMISTRY**. This is the record of original project work done by **R. RAMYA** at Materials Research Center, Madurai under the guidance of **Dr. S. SELVASEKARAPANDIAN**, Director, Materials Research Center, Coimbatore and Emeritus Professor, Bharathiar University, Coimbatore and **Dr. Sr. J. ARUL MARY**, Assistant Professor, Research Centre of Chemistry, Fatima College, Madurai and submitted to Research Centre of Chemistry, Fatima College, Madurai.

**Dr. Sr. J. ARUL MARY**

M.Sc., M.Phil., Ph.D.,

Assistant Professor,

The Research Centre of Chemistry,

Fatima College,

Madurai – 625018

**Dr. S. SELVASEKARAPANDIAN**

M.Sc., Ph.D.,

Director,

Material Research Center,

Coimbatore &

Emeritus Professor,

Bharathiar University,

Coimbatore – 641 045

**HEAD OF THE DEPARTMENT**

**Dr. B. MEDONA, M.Sc., Ph.D.,**

Head and Associate Professor,

Research Centre of Chemistry,

Fatima College,

Madurai – 625018.

**EXTERNAL EXAMINER**



# FATIMA COLLEGE

(Autonomous)

*Affiliated to Madurai Kamaraj University*  
*Re-Accredited with 'A++' by NAAC (Cycle - IV)*  
Mary Land, Madurai - 625018, Tamil Nadu

## DECLARATION

I do hereby declare that this dissertation entitled "FABRICATION OF PRIMARY LITHIUM ION CONDUCTING BATTERY USING CASSIA AURICULATA(AVARAMPOO) BASED AS AN ELECTROLYTE" has been carried out by R. RAMYA (Reg.No:2022MSCC15) and submitted to Research Centre of Chemistry, Fatima College, Madurai in a partial fulfilment of the requirements for the award of MASTER OF SCIENCE IN CHEMISTRY, during the academic year, 2023 – 2024.

Place: Madurai

Date: 26/03/2024

R. Ramya,  
R. RAMYA

Reg. No:2022MSCC15



# FATIMA COLLEGE

(Autonomous)

*Affiliated to Madurai Kamaraj University*  
*Re-Accredited with 'A++' by NAAC (Cycle - IV)*  
Mary Land, Madurai - 625018, Tamil Nadu

## CONSTRUCTION OF PRIMARY ZINC-ION CONDUCTING BATTERY USING CASSIA AURICULATA (AAVARAM POO) AS BIOMATERIAL BASED ELECTROLYTE

*A Project report submitted to Research Centre of Chemistry,  
FATIMA COLLEGE (Autonomous),  
In Partial fulfillment of the requirements for the degree of*

**MASTER OF SCIENCE IN CHEMISTRY**

**S.SAKTHI PANDIMEENA**

(REG NO: 2022MSCC17)



**RESEARCH CENTRE OF CHEMISTRY  
FATIMA COLLEGE (AUTONOMOUS)**

Re - Accredited with A++ Grade by NAAC  
(CGPA: 3.61 in the fourth cycle)

MADURAI - 625 018

*Under the guidance of*

**Dr. S. SELVASEKARAPANDIAN, M.Sc., Ph.D.,**

**DIRECTOR**



**MATERIALS RESEARCH CENTER**

COIMBATORE - 641 045

MARCH - 2024



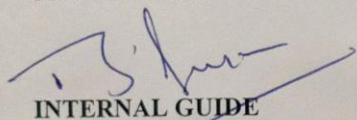
# FATIMA COLLEGE

(Autonomous)

*Affiliated to Madurai Kamaraj University*  
*Re-Accredited with 'A++' by NAAC (Cycle - IV)*  
Mary Land, Madurai - 625018, Tamil Nadu

## BONAFIDE CERTIFICATE

This is to certify that the project report entitled “CONSTRUCTION OF PRIMARY ZINC ION CONDUCTING BATTERY USING CASSIA AURICULATA AS BIOMATERIAL-BASED ELECTROLYTE” submitted to Fatima College, Madurai in partial fulfillment for the award of the degree of MASTER OF SCIENCE IN CHEMISTRY. This is the record of original project work done by Ms. N. SAKTHI PANDIMEENA at Materials Research Centre, Madurai under the guidance of Dr. S. SELVASEKARAPANDIAN, Director, Materials Research Center, Coimbatore and Emeritus Professor, Bharathiar University, Coimbatore and Dr. B. SUGANTHANA, Assistant Professor Research Centre of Chemistry, Fatima College, Madurai and submitted to Research Centre of Chemistry, Fatima College, Madurai.

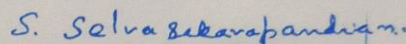


INTERNAL GUIDE

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EXTERNAL GUIDE

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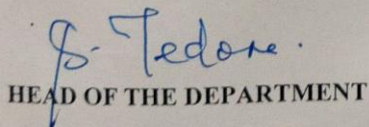
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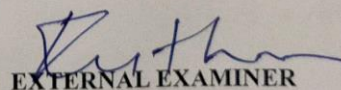
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(Autonomous)

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*Re-Accredited with 'A++' by NAAC (Cycle - IV)*  
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## DECLARATION

I do hereby declare that this dissertation entitled "CONSTRUCTION OF PRIMARY ZINC-ION CONDUCTING BATTERY USING CASSIA AURICULATA AS BIOMATERIAL-BASED ELECTROLYTE" has been carried out by Ms. N. SAKTHI PANDIMEENA (Reg.No:2022MSCC17) and submitted to Research Centre of Chemistry, Fatima College, Madurai in a partial fulfillment of the requirements for the award of MASTER OF SCIENCE IN CHEMISTRY, during the academic year, 2023 – 2024.

Place: Madurai

Date: 26.03.2024

*N. Sakthi Pandimeena*  
N. SAKTHI PANDIMEENA

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Mary Land, Madurai - 625018, Tamil Nadu

CONSTRUCTION OF PRIMARY SODIUM ION CONDUCTING BATTERY  
USING BIOMATERIAL CASSIA AURICULATA BASED SOLID MEMBRANE AS  
AN ELECTROLYTE

*A Project report submitted to Research Centre of Chemistry,*

*FATIMA COLLEGE (Autonomous),*

*In Partial fulfilment of the requirements for the degree of*

MASTER OF SCIENCE IN CHEMISTRY

K. SUDARSORNALAKSHMI

(REG.NO: 2022MSCC21)



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This is to certify that the project report entitled "CONSTRUCTION OF PRIMARY SODIUM ION CONDUCTING BATTERY USING BIOMATERIAL *CASSIA AURICULATA* BASED SOLID MEMBRANE AS AN ELECTROLYTE" submitted to Fatima College, Madurai in partial fulfilment for the award of the degree of MASTER OF SCIENCE IN CHEMISTRY. This is the record of original project work done by Ms. K. SUDARSORNALAKSHMI at Materials Research Center, Madurai under the guidance of Dr. S. SELVASEKARAPANDIAN, Director, Materials Research Center, Coimbatore and Emeritus Professor, Bharathiar University, Coimbatore and Dr. J. BELINDA ASHA, Assistant Professor, Research Centre of Chemistry, Fatima College, Madurai and submitted to Research Centre of Chemistry, Fatima College, Madurai.

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EXTERNAL GUIDE

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Place: Madurai

Date: 26/03/2024

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K.SUDARSORNALAKSHMI

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Mary Land, Madurai - 625018, Tamil Nadu

## FABRICATION OF PRIMARY SODIUM ION CONDUCTING BATTERY USING CASSIA AURICULATA (AAVARAM POO) BASED MEMBRANE AS AN ELECTROLYTE

*A Project report submitted to Research Centre of Chemistry,*

*FATIMA COLLEGE (Autonomous),*

*In Partial fulfilment of the requirements for the degree of*

**MASTER OF SCIENCE IN CHEMISTRY**

**S. UDHAYA PRIYA**

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EXTERNAL EXAMINER



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Place: Madurai

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*S. Udhaya Priya*

**S. UDHAYA PRIYA**

**(Reg. No:2022MSCC22)**