

Profile Image

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## CONTACT

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**Faculty:** Fakulti Sains  
Dan Teknologi

## SUPERVISION

PhD - Completed: 1, Ongoing: 4

Master - Completed: 0,  
Ongoing: 5

## AREAS OF EXPERTISE

Semiconductor Materials

Other Polymer Materials

Other Advanced Materials

Material Physics

Physical Science

## ACADEMIC QUALIFICATION

PhD in Advanced Materials (2006)

Bachelor in Computational Physics And Electronics (2002)

## RESEARCH

1. ENHANCING IONIC CONDUCTING PROPERTIES OF 2-HYDROXYETHYL CELLULOSE-BASED POLYMERS VIA AMMONIUM FORMATE DOPING PROCESS FOR ENERGY STORAGE APPLICATION

2023 GERAN PENYELIDIKAN PENTADBIR ON GOING MAIN RESEARCHER

2. IMMITTANCE RESPONSES AND IONIC CONDUCTION MECHANISM STUDIES OF ENHANCED CMC SOLID BIOPOLYMER ELECTROLYTES VIA FTIR DECONVOLUTION APPROACH

2019 GERAN PENYELIDIKAN USIM COMPLETED MAIN RESEARCHER

# PUBLICATION

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## 1. DEVELOPMENT OF CELLULOSE-BASED FILMS CONTAINING SALICYLIC ACID FOR WOUND DRESSING APPLICATIONS: FABRICATION, PROPERTIES AND IN VITRO ASSESSMENT

JOURNAL OF BIOACTIVE AND COMPATIBLE POLYMERS

2024 JOURNAL ERA MAIN AUTHOR

## 2. CONTRIBUTION OF STILBENE-IMINE ADDITIVES ON THE STRUCTURAL, IONIC CONDUCTIVITY PERFORMANCE AND THEORETICAL EVALUATION ON CMC-BASED BIOPOLYMER ELECTROLYTES

CARBOHYDRATE POLYMERS

2020 JOURNAL ISI, SCOPUS AND ERA MAIN AUTHOR

## 3. NATURAL INSPIRED CARBOXYMETHYL CELLULOSE (CMC) DOPED WITH AMMONIUM CARBONATE (AC) AS BIOPOLYMER ELECTROLYTE

POLYMERS

2020 JOURNAL ERA MAIN AUTHOR

## 4. ELECTRICAL BEHAVIOR OF ETHYLENE CARBONATE-PLASTICIZED CELLULOSE BIOPOLYMER ELECTROLYTE FILMS

MALAYSIAN JOURNAL OF CHEMISTRY

2020 JOURNAL SCOPUS MAIN AUTHOR

## 5. BIOPOLYMER MEMBRANES FOR BATTERY APPLICATIONS

BIOPOLYMER MEMBRANES AND FILMS: HEALTH, FOOD, ENVIRONMENT, AND ENERGY APPLICATIONS.

2020 CHAPTER IN BOOK MAIN AUTHOR

## 6. INVESTIGATION ON TRANSPORT AND THERMAL STUDIES OF SOLID POLYMER ELECTROLYTE BASED ON CARBOXYMETHYL CELLULOSE DOPED AMMONIUM THIOCYANATE FOR POTENTIAL APPLICATION IN ELECTROCHEMICAL DEVICES

INTERNATIONAL JOURNAL OF HYDROGEN ENERGY

2019 JOURNAL ISI, SCOPUS AND ERA MAIN AUTHOR

## 7. 2-HYDROXYETHYL CELLULOSE AS NATURAL BINDER IN ELECTRODES FOR SOLID-STATE PROTON BATTERY: CONSTRUCTION AND PRELIMINARY RESULTS

ASM SCIENCE JOURNAL SPECIAL ISSUE

2018 JOURNAL SCOPUS MAIN AUTHOR

## 8. CONDUCTION MECHANISM VIA CORRELATED BARRIER HOPPING IN EC-PLASTICIZED 2-HYDROXYETHYL CELLULOSE-AMMONIUM NITRATE SOLID POLYMER ELECTROLYTE

MATERIALS SCIENCE AND ENGINEERING

2018 JOURNAL SCOPUS MAIN AUTHOR

## 9. IONIC CONDUCTION STUDY OF 2-HYDROXYETHYL CELLULOSE DOPED WITH DODECYLTRIMETHYL AMMONIUM BROMIDE SOLID BIOPOLYMER ELECTROLYTES

JOURNAL OF SUSTAINABILITY SCIENCE AND MANAGEMENT

2018 JOURNAL SCOPUS MAIN AUTHOR

## 10. CONDUCTION MECHANISM VIA CORRELATED BARRIER HOPPING IN EC-PLASTICIZED 2-HYDROXYETHYL CELLULOSE-AMMONIUM NITRATE SOLID POLYMER ELECTROLYTE

IOP CONFERENCE SERIES: MATERIALS SCIENCE AND ENGINEERING

2018 JOURNAL SCOPUS MAIN AUTHOR

## 11. X-RAY DIFFRACTION AND INFRARED SPECTROSCOPIC ANALYSIS OF SOLID BIOPOLYMER ELECTROLYTES BASED ON DUAL BLEND CARBOXYMETHYL CELLULOSE-CHITOSAN DOPED WITH AMMONIUM BROMIDE

ASM SCIENCE JOURNAL SPECIAL ISSUE

2018 JOURNAL SCOPUS MAIN AUTHOR

## 12. IONIC CONDUCTIVITY AND STRUCTURAL ANALYSIS OF 2-HYDROXYETHYL CELLULOSE DOPED WITH GLYCOLIC ACID SOLID BIOPOLYMER ELECTROLYTES FOR SOLID PROTON BATTERY

IOP CONFERENCE SERIES: MATERIALS SCIENCE AND ENGINEERING

2018 JOURNAL SCOPUS MAIN AUTHOR

**13. CARBOXYMETHYL CELLULOSE ? AMMONIUM CHLORIDE ON ELECTRICAL OF PLASTICIZED PROPYLENE CARBONATE SOLID BIO-POLYMER ELECTROLYTES (SBPS) USING EXPERIMENTAL AND COMPUTATIONAL STUDIES**

PHOSPHORUS, SULFUR, AND SILICON

2018

JOURNAL

SCOPUS

MAIN AUTHOR

# PUBLICATION

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## 14. IONIC CONDUCTIVITY AND CONDUCTION MECHANISM STUDIES ON CELLULOSE BASED SOLID POLYMER ELECTROLYTES DOPED WITH AMMONIUM CARBONATE.

POLYMER BULLETIN

2017 JOURNAL SCOPUS MAIN AUTHOR

## 15. CHARACTERIZATION OF POLYETHYLENE GLYCOL PLASTICIZED CARBOXYMETHYL CELLULOSE-AMMONIUM FLOURIDE SOLID BIOPOLYMER ELECTROLYTES.

AIP CONFERENCE PROCEEDINGS

2017 JOURNAL SCOPUS MAIN AUTHOR

## 16. SOLID POLYMER ELECTROLYTE PRODUCTION FROM 2-HYDROXYETHYL CELLULOSE: EFFECT OF AMMONIUM NITRATE COMPOSITION ON ITS STRUCTURAL PROPERTIES

CARBOHYDRATE POLYMERS

2017 JOURNAL WOS MAIN AUTHOR

## 17. SOLID BIOPOLYMER ELECTROLYTES BASED ON CARBOXYMETHYL CELLULOSE FOR USE IN COIN CELL PROTON BATTERIES.

JOURNAL OF SUSTAINABILITY SCIENCE AND MANAGEMENT SPECIAL ISSUE

2017 JOURNAL SCOPUS MAIN AUTHOR

## 18. STRUCTURAL AND IONIC CONDUCTIVITY STUDIES ON PROTON CONDUCTING SOLID BIOPOLYMER ELECTROLYTE BASED ON 2-HYDROXYETHYL CELLULOSE INCORPORATED DTAB.

AIP CONFERENCE PROCEEDINGS

2017 JOURNAL SCOPUS MAIN AUTHOR

## 19. STUDIES OF IONIC CONDUCTIVITY AND A.C. CONDUCTION MECHANISM OF 2-HYDROXYETHYL CELLULOSE BASED SOLID POLYMER ELECTROLYTES.

JOURNAL OF SUSTAINABILITY SCIENCE AND MANAGEMENT SPECIAL ISSUE

2017 JOURNAL SCOPUS MAIN AUTHOR

## 20. TRANSPORT STUDIES OF CARBOXY METHYL CELLULOSE/CHITOSAN-AMMONIUM BROMIDE BIOPOLYMER BLEND ELECTROLYTES AS AN IONIC CONDUCTOR.

JOURNAL OF SUSTAINABILITY SCIENCE AND MANAGEMENT SPECIAL ISSUE

2017 JOURNAL SCOPUS MAIN AUTHOR

## 21. AN ENHANCEMENT ON ELECTRICAL PROPERTIES OF CARBOXYMETHYL CELLULOSE-NH<sub>4</sub>BR BASED BIOPOLYMER ELECTROLYTES THROUGH IMPEDANCE CHARACTERIZATION.

INTERNATIONAL JOURNAL OF POLYMER ANALYSIS AND CHARACTERIZATION

2017 JOURNAL SCOPUS MAIN AUTHOR

## 22. ANALYSES OF IONIC CONDUCTIVITY AND DIELECTRIC BEHAVIOR OF SOLID POLYMER ELECTROLYTE BASED 2-HYDROXYETHYL CELLULOSE DOPED AMMONIUM NITRATE PLASTICIZED WITH ETHYLENE CARBONATE

AIP CONFERENCE PROCEEDINGS.

2017 JOURNAL SCOPUS MAIN AUTHOR

## 23. THE EFFECT OF IONIC CHARGE CARRIERS IN 2-HYDROXYETHYL CELLULOSE SOLID BIOPOLYMER ELECTROLYTES DOPED GLYCOLIC ACID VIA FTIR-DECONVOLUTION TECHNIQUE.

JOURNAL OF SUSTAINABILITY SCIENCE AND MANAGEMENT SPECIAL ISSUE

2017 JOURNAL SCOPUS MAIN AUTHOR

## 24. CHARACTERIZATION OF PROTON CONDUCTING CARBOXYMETHYL CELLULOSE/CHITOSAN DUAL-BLEND BASED BIOPOLYMER ELECTROLYTES

MATERIALS SCIENCE FORUM

2016 JOURNAL SCOPUS MAIN AUTHOR

## 25. IONIC CONDUCTIVITY AND ELECTRICAL PROPERTIES OF CARBOXYMETHYL CELLULOSE - NH<sub>4</sub>CL SOLID POLYMER ELECTROLYTES

JOURNAL OF ENGINEERING SCIENCE AND TECHNOLOGY

2016 JOURNAL SCOPUS MAIN AUTHOR

**26. NOVEL PROTON CONDUCTING SOLID BIO-POLYMER ELECTROLYTES BASED ON CARBOXYMETHYL CELLULOSE DOPED WITH OLEIC ACID AND PLASTICIZED WITH GLYCEROL**

SCIENTIFIC REPORTS

2016

JOURNAL

WOS

MAIN AUTHOR

# PUBLICATION

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## 27. CHARACTERIZATION OF UN-PLASTICIZED AND PROPYLENE CARBONATE PLASTICIZED CARBOXYMETHYL CELLULOSE DOPED AMMONIUM CHLORIDE SOLID BIOPOLYMER ELECTROLYTES

CARBOHYDRATE POLYMERS

2016 JOURNAL WOS MAIN AUTHOR

## 28. STRUCTURAL AND IONIC TRANSPORT PROPERTIES OF PROTONIC CONDUCTING SOLID BIOPOLYMER ELECTROLYTES BASED ON CARBOXYMETHYL CELLULOSE DOPED WITH AMMONIUM FLUORIDE

THE JOURNAL OF PHYSICAL CHEMISTRY B

2016 JOURNAL WOS MAIN AUTHOR

## 29. EFFECT OF AMMONIUM CARBONATE SALT CONCENTRATION ON STRUCTURAL AND IONIC CONDUCTIVITY OF CELLULOSE BASED SOLID POLYMER ELECTROLYTES

FIBERS AND POLYMERS

2015 JOURNAL SCOPUS MAIN AUTHOR

## 30. IONIC CONDUCTIVITY AND CONDUCTION MECHANISM OF BIODEGRADABLE DUAL POLYSACCHARIDES BLEND ELECTROLYTES

AMERICAN-EURASIAN JOURNAL OF SUSTAINABLE AGRICULTURE

2015 JOURNAL SCOPUS MAIN AUTHOR

## 31. CONDUCTIVITY AND DIELECTRIC ANALYSIS OF CELLULOSE BASED SOLID POLYMER ELECTROLYTES DOPED WITH AMMONIUM CARBONATE (NH<sub>4</sub>CO<sub>3</sub>)

APPLIED MECHANICS AND MATERIALS

2015 JOURNAL SCOPUS MAIN AUTHOR

## 32. STRUCTURAL AND CONDUCTION STUDIES OF SOLID BIO POLYMER ELECTROLYTES SYSTEM BASED ON CARBOXYMETHYL CELLULOSE

AMERICAN-EURASIAN JOURNAL OF SUSTAINABLE AGRICULTURE

2015 JOURNAL SCOPUS MAIN AUTHOR

## 33. IONIC CONDUCTION MECHANISM OF SOLID BIODEGRADABLE POLYMER ELECTROLYTES BASED CARBOXYMETHYL CELLULOSE DOPED AMMONIUM THIOCYANATE

APPLIED MECHANICS AND MATERIALS

2015 JOURNAL SCOPUS MAIN AUTHOR

## 34. SOLID BIOPOLYMER ELECTROLYTES BASED CARBOXYMETHYL CELLULOSE DOPED WITH AMMONIUM FLUORIDE: IONIC TRANSPORT AND CONDUCTION MECHANISM

POLYMERS FROM RENEWABLE RESOURCES

2015 JOURNAL SCOPUS MAIN AUTHOR

## 35. CONDUCTION MECHANISM OF SOLID BIOPOLYMER ELECTROLYTES SYSTEM BASED ON CARBOXYMETHYL CELLULOSE ? AMMONIUM CHLORIDE

AMERICAN-EURASIAN JOURNAL OF SUSTAINABLE AGRICULTURE

2015 JOURNAL SCOPUS MAIN AUTHOR

## 36. ELECTRICAL STUDIES OF CARBOXY METHYLCELLULOSE - CHITOSAN BLEND BIOPOLYMER DOPED DODECYLTRIMETHYL AMMONIUM BROMIDE SOLID ELECTROLYTES

AMERICAN JOURNAL OF APPLIED SCIENCES

2015 JOURNAL SCOPUS MAIN AUTHOR

## 37. IONIC CONDUCTIVITY AND STRUCTURAL ANALYSIS OF CARBOXYLMETHYL CELLULOSE DOPED WITH AMMONIUM FLUORIDE AS SOLID BIOPOLYMER ELECTROLYTES

AMERICAN-EURASIAN JOURNAL OF SUSTAINABLE AGRICULTURE

2015 JOURNAL SCOPUS MAIN AUTHOR

## 38. PROTON CONDUCTING SOLID POLYMER ELECTROLYTES BASED CARBOXYMETHYL CELLULOSE DOPED AMMONIUM CHLORIDE: IONIC CONDUCTIVITY AND TRANSPORT STUDIES

INTERNATIONAL JOURNAL OF PLASTICS TECHNOLOGY

2015 JOURNAL SCOPUS MAIN AUTHOR

**39. EFFECT OF ADIPIC ACID COMPOSITION ON STRUCTURAL AND CONDUCTIVITY SOLID BIOPOLYMER ELECTROLYTES BASED ON CARBOXY METHYLCELLULOSE STUDIES.**

AMERICAN-EURASIAN JOURNAL OF SUSTAINABLE AGRICULTURE

2015

JOURNAL

SCOPUS

MAIN AUTHOR

# PUBLICATION

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## 40. INVESTIGATION OF THE IONIC CONDUCTION MECHANISM IN CARBOXYMETHYL CELLULOSE/CHITOSAN BIOPOLYMER BLEND ELECTROLYTE IMPREGNATED WITH AMMONIUM NITRATE

INTERNATIONAL JOURNAL OF POLYMER ANALYSIS AND CHARACTERIZATION

2015

JOURNAL

SCOPUS

MAIN AUTHOR



# CONSULTATION

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## 1. PELANTIKAN SEBAGAI PANEL KONSORTIUM KECEMERLANGAN PENYELIDIKAN (KKP) 2023-2024

JABATAN PENDIDIKAN TINGGI

2023

NATIONAL

## 2. KNOWLEDGE TRANSFER PROGRAMME-KTP

KEMENTERIAN PENDIDIKAN MALAYSIA

2019

NATIONAL

## 3. PANEL KENAIKAN PANGKAT AHLI AKADEMIK UMT

UNIVERSITI MALAYSIA TERENGGANU

2019

NATIONAL

# AWARDS/RECOGNITION

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## 1. ANUGERAH SITASI TERTINGGI (TAHUN SEMASA) KLUSTER SAINS, TEKNOLOGI DAN PERUBATAN

2024

UNIVERSITY

## 2. ANUGERAH SITASI TERTINGGI (TAHUN SEMASA) KLUSTER SAINS, TEKNOLOGI DAN PERUBATAN

2024

UNIVERSITY

## 3. ANUGERAH PENERIMA GERAN PENYELIDIKAN

2024

UNIVERSITY

## 4. ANUGERAH PERKHIDMATAN CEMERLANG TAHUN 2023

2024

UNIVERSITY

## 5. ANUGERAH PENERBITAN JURNAL BERINDEKS WOS/SCOPUS/MYCITE

2024

UNIVERSITY