



**PROF. MADYA DR.  
AZWANI SOFIA BINTI  
AHMAD KHIAR**

PENSYARAH UNIVERSITI DS14

## CONTACT

**Phone:** 06-798 6541

**E-mail:**

azwanisofia@usim.edu.my

**Faculty:** Fakulti Sains  
Dan Teknologi

## SUPERVISION

PhD - Completed: 0, Ongoing: 0

Master - Completed: 4,  
Ongoing: 2

## AREAS OF EXPERTISE

Solid State And Polymer Electrolyte Physics

Polymer Electrolytes

Electrolytes For Batteries

## ACADEMIC QUALIFICATION

PhD in Bahan Termaju (2006)

Bachelor in Fizik Komputer Dan Elektronik (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

CO-RESEARCHER

### 2. TRANSPORT PROPERTIES OF CELLULOSE DERIVATIVES BASED POLYMER ELECTROLYTE DOPED WITH IONIC LIQUIDS USING SPECTROSCOPY METHODS

2023

GERAN KPT

ON GOING

MAIN RESEARCHER

### 3. STRUCTURAL AND ELECTRICAL PROPERTIES OF SI/ZNO/C AND SI/ZN/C NANOSTRUCTURE COMPOSITES AS ANODE USING HOT TUBE THERMAL EVAPORATION SYSTEM FOR HIGH CAPACITY BATTERIES

2021

GERAN PENYELIDIKAN USIM

ON GOING

CO-RESEARCHER

### 4. INVESTIGATION OF TRI-MODALITY IMAGE REGISTRATION FOR NAVIGATING CARDIOVASCULAR DISEASE TREATMENT PROCEDURE

2019

GERAN PENYELIDIKAN USIM

COMPLETED

CO-RESEARCHER

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

2019

GERAN PENYELIDIKAN USIM

COMPLETED

CO-RESEARCHER

# RESEARCH

---

## 6. ELECTRICAL STUDIES OF RENEWABLE BIONANOCOMPOSITE BIOPOLYMER ELECTROLYTE FOR DYE SENSITIZED SOLAR CELL (DSSC) APPLICATION

2016 GERAN KPT COMPLETED MAIN RESEARCHER

## 7. CHARACTERIZATION OF DEEP EUTETIC SOLVENT (DES) - DOPED CHITOSAN BASED POLYMER ELECTROLYTE FRO SOLAR CELL APPLICATION

2013 GERAN PENYELIDIKAN USIM COMPLETED MAIN RESEARCHER

## 8. ELECTRICAL STUDIES OF LAUROYL-CHITOSAN BLEND POLYMER ELECTROLYTES FOR APPLICATION IN LITHIUM BATTERY

2012 GERAN KPT COMPLETED MAIN RESEARCHER

## 9. CARBON NANOTUBE AS ELECTRODE MATERIAL FOR HIGH PERFORMANCE ELECTROCHEMICAL DOUBLE LAYER CAPACITORS (EDLC) WITH HYBRID SOLID POLYMER ELECTROLYTE (HSPE).

2011 GERAN KPT COMPLETED CO-RESEARCHER

## 10. STUDY ON THE ACTUATING MECHANISM OF SELF SENSING ACTUATOR MADE FROM THE PALM OIL BASED SHAPE MEMORY POLYURETHANE (SMPU)

2011 GERAN KPT COMPLETED CO-RESEARCHER

## 11. PRELIMINARY STUDY OF BIO-BASED SHAPE MEMORY POLYURETHANE NANOCOMPOSITES FOR BIOMEDICAL APPLICATION

2011 GERAN PENYELIDIKAN FUNDAMENTAL COMPLETED CO-RESEARCHER

## 12. PRELIMINARY STUDY OF CAPROLACTONE/PALM KERNEL OIL BASED POLYOL FOR POLYURETHANE BIOADHESIVE

2011 GERAN PENYELIDIKAN FUNDAMENTAL COMPLETED CO-RESEARCHER

## 13. KEMAHIRAN INSANIAH DI KALANGAN "ISLAMIC GENIUS"

2010 GERAN KPT COMPLETED CO-RESEARCHER

## 14. THE STUDY OF CELLULOSE-BASED HYBRID SOLID POLYMER ELECTROLYTES

2010 GERAN KPT COMPLETED CO-RESEARCHER

## 15. STUDY ON BIOLOGICAL OF ESSENTIAL OIL FROM CYMBOPOGON SP.

2009 GERAN PENYELIDIKAN FUNDAMENTAL COMPLETED CO-RESEARCHER

## 16. THE STUDY OF SOLID POLYMER ELECTROLYTES FROM BIOPOLYMERS

2008 GERAN KPT COMPLETED MAIN RESEARCHER

## 17. DEVELOPMENT OF SOLID ELECTROLYTES USING NATURAL POLYMERS

2007 GERAN PENYELIDIKAN FUNDAMENTAL COMPLETED MAIN RESEARCHER

# PUBLICATION

---

## 1. THE EFFECT OF NH<sub>4</sub>BR COMPOSITION ON ELECTRICAL BEHAVIOUR OF 2-HYDROXYETHYL CELLULOSE SOLID BIOPOLYMER ELECTROLYTES

JOURNAL OF ADVANCED RESEARCH IN FLUID MECHANICS AND THERMAL SCIENCES

2025 JOURNAL OTHER DATABASE CORRESPONDING AUTHOR

## 2. SYNTHESIS AND CHARACTERIZATION OF ANODIC ALUMINA OXIDE USING OXALIC ACID AS ELECTROLYTE SOLUTION

APPLIED MECHANICS AND MATERIALS

2025 JOURNAL OTHER DATABASE CO-AUTHOR

## 3. EFFECT OF DYE EXTRACTION FROM MANGOSTEEN PERICARP WITH DIFFERENT EXTRACTION SOLVENTS FOR DSSC FABRICATION OF DYE EXTRACTION FROM MANGOSTEEN PERICARP WITH DIFFERENT EXTRACTION SOLVENTS FOR DSSC FABRICATION

APPLIED MECHANICS AND MATERIALS

2025 JOURNAL SCOPUS CO-AUTHOR

## 4. PREPARATION AND CHARACTERIZATION OF RICE HUSK BIOCHAR-BASED CHEMICAL ACTIVATED CARBON IN VARYING PARTICLE SIZE

KARYA INTERNATIONAL JOURNAL OF BIOFUEL AND BIOENERGY

2025 JOURNAL MYCITE CORRESPONDING AUTHOR

## 5. 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 CO-AUTHOR

## 6. OPTIMIZATION OF METHYL CELLULOSE BIOPOLYMER ELECTROLYTE CONDUCTIVITY VIA RESPONSE SURFACE METHODOLOGY

NEXT MATERIALS

2024 JOURNAL OTHER DATABASE CO-AUTHOR

## 7. SYNTHESIS OF OXANORBORNENE-BASED PHOSPHONIUM POLYMERIC IONIC LIQUIDS (PILS) AND INVESTIGATION OF THEIR ELECTRICAL PROPERTIES

MATERIALS ADVANCES

2024 JOURNAL OTHER DATABASE CO-AUTHOR

## 8. STRUCTURAL AND ELECTROCHEMICAL PROPERTIES OF BINARY ZNO:AL NANOCOMPOSITES AS ANODE FOR LITHIUM-ION BATTERIES

MALAYSIAN JOURNAL OF SCIENCE HEALTH & TECHNOLOGY

2024 JOURNAL OTHER DATABASE CO-AUTHOR

## 9. POLYURETHANE-BASED POLYMER ELECTROLYTE FOR LITHIUM ION BATTERIES: A REVIEW

POLYMER INTERNATIONAL

2022 JOURNAL ERA CO-AUTHOR

## 10. CONDUCTION MECHANISM OF CHITOSAN/METHYLCELLULOSE/1-BUTYL-3 METHYL IMIDAZOLIUM BIS (TRIFLUOROMETHYLSULFONYL) IMIDE (BMIMTFSI) BIOPOLYMER ELECTROLYTE DOPED WITH AMMONIUM TRIFLATE

MALAYSIAN JOURNAL OF CHEMISTRY

2020 JOURNAL SCOPUS MAIN AUTHOR / CONTACT PERSON IN USIM

## 11. STRUCTURAL STUDIES AND IONIC TRANSPORT PROPERTIES OF SOLID BIOPOLYMER ELECTROLYTES BASED ON CHITOSAN/ METHYL CELLULOSE BLEND DOPED WITH BMIMTFSI

SOLID STATE PHENOMENA

2020 JOURNAL SCOPUS MAIN AUTHOR / CONTACT PERSON IN USIM

## 12. THE EFFECT OF MICROCRYSTALLINE CELLULOSE (MCC) ON COATING PAINT FILM'S SURFACE PERFORMANCE AS NON-STICK COATING

PIGMENT & RESIN TECHNOLOGY

2020 JOURNAL ISI MAIN AUTHOR / CONTACT PERSON IN USIM

## 13. EFFECT OF IONIC LIQUID BMIMNO<sub>3</sub> TO CHITOSAN-STARCH BLEND BIOPOLYMER ELECTROLYTE SYSTEM

SOLID STATE PHENOMENA

2019 JOURNAL SCOPUS CO-AUTHOR

# PUBLICATION

---

## 14. CHARACTERIZATION OF CHITOSAN-STARCH BLEND BASED BIOPOLYMER ELECTROLYTE DOPED WITH AMMONIUM NITRATE

AIP CONFERENCE PROCEEDINGS

2018 JOURNAL SCOPUS CO-AUTHOR

## 15. EFFECT OF BMITFSI TO THE ELECTRICAL PROPERTIES OF CHITOSAN/METHYLCELLULOSE BASED POLYMER ELECTROLYTE

AIP CONFERENCE PROCEEDINGS

2018 JOURNAL SCOPUS MAIN AUTHOR

## 16. ELECTRICAL AND STRUCTURAL STUDIES OF POLYMER ELECTROLYTE BASED ON CHITOSAN/METHYL CELLULOSE BLEND DOPED WITH BMIMTFSI

MATERIALS RESEARCH EXPRESS

2018 JOURNAL SCI CO-AUTHOR

## 17. CONDUCTIVITY, DIELECTRIC AND MODULUS STUDY OF CHITOSAN-METHYL CELLULOSE ? BMIMTFSI POLYMER ELECTROLYTE DOPED WITH CELLULOSE NANO CRYSTAL

AIP CONFERENCE PROCEEDINGS

2018 JOURNAL SCOPUS CO-AUTHOR

## 18. CONDUCTIVITY, DIELECTRIC AND MODULUS STUDIES OF METHYLCELLULOSE-NH<sub>4</sub>TF POLYMER ELECTROLYTE

EURASIAN JOURNAL OF BIOLOGICAL AND CHEMICAL SCIENCES

2018 JOURNAL OTHER DATABASE MAIN AUTHOR

## 19. CONDUCTIVITY STUDIES OF METHYL CELLULOSE/CHITOSAN/1-BUTYL-3-METHYL IMIDAZOLIUM BIS(TRIFLUORO SULFONYL) IMIDE DOPED WITH AMMONIUM TRIFLATE BASED POLYMER ELECTROLYTE

19TH WORLD CONGRESS ON MATERIALS SCIENCE AND ENGINEERING

2018 PROCEEDING NON-INDEX MAIN AUTHOR

## 20. ELECTRICAL CONDUCTIVITY OF BIOBASED SHAPE MEMORY POLYURETHANE FILLED WITH CNT

MATERIALS SCIENCE FORUM

2017 JOURNAL SCOPUS CO-AUTHOR

## 21. COLOR STABILITY AND CORROSION RESISTIVITY OF NATURAL DYE COATING PAINT FILM CONSISTING OF CURCUMIN

ADVANCED SCIENCE LETTERS

2017 JOURNAL SCOPUS MAIN AUTHOR

## 22. EFFECT OF 1-ETHYL-3-METHYLIMIDAZOLIUM NITRATE ON THE ELECTRICAL PROPERTIES OF STARCH/CHITOSAN BLEND POLYMER ELECTROLYTE

MATERIALS SCIENCE FORUM

2016 JOURNAL SCOPUS MAIN AUTHOR

## 23. ELECTRICAL PROPERTIES OF STARCH/PEO BLEND POLYMER ELECTROLYTES.

APPLIED MECHANICS AND MATERIALS

2015 JOURNAL SCOPUS MAIN AUTHOR

## 24. ELECTRICAL PROPERTY OF METHYLCELLULOSE/CHITOSAN-NH<sub>4</sub>NO<sub>3</sub>-EC PLASTICIZED POLYMER ELECTROLYTE

APPLIED MECHANICS AND MATERIALS

2015 JOURNAL SCOPUS MAIN AUTHOR

## 25. EFFECT OF BMITFSI TO THE ELECTRICAL PROPERTIES OF METHYLCELLULOSE/CHITOSAN/NH<sub>4</sub>TF BASED POLYMER ELECTROLYTE

SPIE MICRO+NANO MATERIALS, DEVICES, AND SYSTEMS

2015 PROCEEDING NON-INDEX MAIN AUTHOR

## 26. EFFECT OF LICF3SO<sub>3</sub> ON L-CHITOSAN/PMMA BLEND POLYMER ELECTROLYTES

MOLECULAR CRYSTALS AND LIQUID CRYSTALS

2014 JOURNAL SCI MAIN AUTHOR

# PUBLICATION

---

## 27. CONDUCTIVITY AND DIELECTRIC STUDIES OF METHYLCELLULOSE/CHITOSAN-NH<sub>4</sub>CF<sub>3</sub>SO<sub>3</sub> POLYMER ELECTROLYTE

KEY ENGINEERING MATERIALS

2014 JOURNAL SCOPUS MAIN AUTHOR

## 28. CONDUCTIVITY AND DIELECTRIC BEHAVIOUR STUDIES OF LICF<sub>3</sub>SO<sub>3</sub> DISSOCIATION IN L-CHITOSAN/PMMA-BASED POLYMER ELECTROLYTES.

MALAYSIAN JOURNAL OF FUNDAMENTAL AND APPLIED SCIENCES

2013 JOURNAL OTHER DATABASE MAIN AUTHOR

## 29. CONDUCTIVITY AND DIELECTRIC BEHAVIOUR STUDIES OF LICF<sub>3</sub>SO<sub>3</sub> DISSOCIATION IN L-CHITOSAN/PMMA-BASED POLYMER ELECTROLYTES

REGIONAL ANNUAL FUNDAMENTAL SCIENCE SYMPOSIUM 2012

2012 PROCEEDING NON-INDEX MAIN AUTHOR

## 30. SUPERCAPACITOR BASED ON ACTIVATED CARBON AND HYBRID SOLID POLYMER ELECTROLYTE

MATERIALS RESEARCH INNOVATIONS

2011 JOURNAL WOS CO-AUTHOR

## 31. CONDUCTIVITY AND DIELECTRIC BEHAVIOR STUDIES OF STARCH/PEO + X WT% NH<sub>4</sub>NO<sub>3</sub> POLYMER ELECTROLYTE

MATERIALS RESEARCH INNOVATIONS

2011 JOURNAL WOS MAIN AUTHOR

## 32. ELECTRICAL PROPERTIES OF STARCH/CHITOSAN-NH<sub>4</sub>NO<sub>3</sub> POLYMER ELECTROLYTE

WORLD ACADEMY OF SCIENCE, ENGINEERING AND TECHNOLOGY

2011 JOURNAL OTHER DATABASE MAIN AUTHOR

## 33. TRANSPORT AND AC IMPEDANCE STUDIES OF PLASTICIZED-CHITOSAN BASED POLYMER ELECTROLYTES

INDONESIAN JOURNAL OF PHYSICS

2011 JOURNAL OTHER DATABASE MAIN AUTHOR

## 34. CONDUCTIVITY STUDIES OF STARCH-BASED POLYMER ELECTROLYTES

IONICS

2010 JOURNAL WOS MAIN AUTHOR

## 35. CONDUCTIVITY AND DIELECTRIC BEHAVIOR STUDIES OF STARCH/PEO + X WT% NH<sub>4</sub>NO<sub>3</sub> POLYMER ELECTROLYTE

3RD INTERNATIONAL CONFERENCE ON FUNCTIONAL MATERIALS AND DEVICES, 2010 (ICFMD) 2010

2010 PROCEEDING NON-INDEX MAIN AUTHOR

## 36. SUPERCAPACITOR BASED ON ACTIVATED CARBON AND HYBRID SOLID POLYMER ELECTROLYTE

3RD INTERNATIONAL CONFERENCE ON FUNCTIONAL MATERIALS AND DEVICES, 2010 (ICFMD) 2010

2010 PROCEEDING NON-INDEX CO-AUTHOR

## 37. NATURAL POLYMERS: ALTERNATIVE RESOURCES FOR THE DEVELOPMENT OF POLYMER ELECTROLYTES.

TWAS YOUNG SCIENTISTS OF ASIA CONCLAVE: PRESSING PROBLEMS OF HUMANKIND: ENERGY & CLIMATE (A MEETING OF CONCERNED YOUNG SCIENTISTS))

2009 PROCEEDING NON-INDEX MAIN AUTHOR

## 38. EFFECT OF STARCH/CHITOSAN BLEND TO THE PERFORMANCE ON A SOLID STATE CELL

17TH INTERNATIONAL CONFERENCE ON SOLID STATE IONICS

2009 PROCEEDING NON-INDEX MAIN AUTHOR

## 39. EFFECT OF ADDITIVE TO AMMONIUM NITRATE DOPED STARCH BASED POLYMER ELECTROLYTE

NATIONAL WORKSHOP ON FUNCTIONAL MATERIALS 2009

2009 PROCEEDING NON-INDEX MAIN AUTHOR

# PUBLICATION

---

## 40. GREEN CHEMISTRY: CHALLENGES AND OPPORTUNITIES.

SAINS ISLAM DAN PEMBANGUNAN MODAL INSAN

2008 CHAPTER IN BOOK CO-AUTHOR

## 41. THE ELECTRICAL BEHAVIOR OF STARCH-BASED POLYMER ELECTROLYTES

JOURNAL OF FUDAN UNIVERSITY (NATURAL SCIENCES)

2007 JOURNAL OTHER DATABASE MAIN AUTHOR

## 42. THE IMPEDANCE STUDIES OF STARCH-NH<sub>4</sub>NO<sub>3</sub> FILMS

JOURNAL OF FUDAN UNIVERSITY (NATURAL SCIENCES)

2007 JOURNAL OTHER DATABASE CO-AUTHOR

## 43. PLASTICIZED-CHITOSAN BASED POLYMER ELECTROLYTES.

INTERNATIONAL CONFERENCE ON ADVANCEMENT OF MATERIALS AND NANOTECHNOLOGY 2007

2007 PROCEEDING NON-INDEX MAIN AUTHOR

## 44. CONDUCTIVITY STUDIES OF A CHITOSAN-BASED POLYMER ELECTROLYTE.

PHYSICA B: CONDENSED MATTER

2006 JOURNAL WOS MAIN AUTHOR

## 45. IONIC HOPPING TRANSPORT IN CHITOSAN-BASED POLYMER ELECTROLYTES

MATERIALS SCIENCE FORUM

2006 JOURNAL SCOPUS MAIN AUTHOR

## 46. EFFECT OF ETHYLENE SULPHITE ON THE CONDUCTIVITY AND MORPHOLOGY OF PEO-KOH FILMS

MATERIALS SCIENCE FORUM

2006 JOURNAL SCOPUS CO-AUTHOR

## 47. IONIC CONDUCTIVITY OF CHITOSAN MEMBRANES AND APPLICATION FOR ELECTROCHEMICAL DEVICES

POLYMERS FOR ADVANCED TECHNOLOGIES

2006 JOURNAL WOS CO-AUTHOR

## 48. CHARACTERIZATIONS OF CHITOSAN-AMMONIUM TRIFLATE (NH<sub>4</sub>CF<sub>3</sub>SO<sub>3</sub>) COMPLEXES BY FTIR AND IMPEDANCE SPECTROSCOPY

PHYSICA STATUS SOLIDI A

2006 JOURNAL WOS MAIN AUTHOR

## 49. CONDUCTIVITY STUDIES ON CHITOSAN/PEO BLENDS WITH LITFSI SALT

IONICS

2005 JOURNAL WOS CO-AUTHOR

## 50. TRANSPORT STUDIES ON FILLER-DOPED CHITOSAN BASED POLYMER ELECTROLYTE

IONICS

2005 JOURNAL WOS CO-AUTHOR

## 51. STUDIES OF DMC-PLASTICIZED CHITOSAN-NH<sub>4</sub>CF<sub>3</sub>SO<sub>3</sub> POLYMER ELECTROLYTE

ASIAN PHYSICS SYMPOSIUM

2005 PROCEEDING NON-INDEX CO-AUTHOR

## 52. ENHANCEMENT ON THE CONDUCTIVITY AND DIELECTRIC OF CHITOSAN ACETATE FILMS BY ADDITION OF H<sub>3</sub>PO<sub>4</sub>

ASIAN PHYSICS SYMPOSIUM

2005 PROCEEDING NON-INDEX CO-AUTHOR

# CONSULTATION

---

## 1. PENILAIAN PEMATUHAN SYARAT-SYARAT AKREDITASI SEMENTARA DIPLOMA SAINS SECARA KERJASAMA DENGAN UITM (MQA/FA 7207)

AGENSI KELAYAKAN MALAYSIA

2020 NATIONAL

## 2. PANEL PENILAI AKREDITASI PENUH PROGRAM DOKTOR FALSAFAH UNIVERSITI MALAYSIA PAHANG

AGENSI KELAYAKAN MALAYSIA

2019 NATIONAL

## 3. PANEL PENILAI PENILAIAN PEMATUHAN AKREDITASI PENUH PROGRAM

AGENSI KELAYAKAN MALAYSIA

2019 NATIONAL

## 4. PENILAI PROGRAM 'DIPLOMA IN SCIENCE' SECARA KERJASAMA DENGAN UITM (MQA/FA 7207)

AGENSI KELAYAKAN MALAYSIA

2018 NATIONAL

## 5. PELANTIKAN SEBAGAI AUDITOR UNTUK AUDIT AKREDITASI PENUH/AUDIT VERIFIKASI PROGRAM IJAZAH SARJANA MUDA SAINS DAN IJAZAH SAINS MUDA SAINS GUNAAN DI PUSAT PENGAJIAN SAINS FIZIK, USM

UNIVERSITI SAINS MALAYSIA

2018 NATIONAL

## 6. PENILAI AKREDITASI PROVISIONAL PRA DIPLOMA (SAINS) SECARA KERJASAMA DENGAN UITM, KOLEJ ANTARABANGSA SAINS DAN TEKNOLOGI MELAKA (MICOST)

AGENSI KELAYAKAN MALAYSIA

2015 NATIONAL

## 7. PANEL PENILAI BAGI AUDIT DAN AKREDITASI PROGRAM PENGAJIAN DI UNIVERSITI KEBANGSAAN MALAYSIA

UNIVERSITI KEBANGSAAN MALAYSIA

2015 NATIONAL

## 8. PANEL PENILAI UNTUK PENGESAHAN FASILITI I UNIVERSITI TUNKU ABDUL RAHMAN (UTAR), KAMPUNG SG. LONG, KAJANG

AGENSI KELAYAKAN MALAYSIA (MQA)

2015 NATIONAL

## 9. PENILAI AKREDITASI SEMENTARA FOUNDATION IN SCIENCE (FIS) PROGRAMME, KOLEJ ANTARABANGSA PERNIAGAAN DAN PENGURUSAN (BUSINESS AND MANAGEMENT INTERNATIONAL COLLEGE, BMIC)

AGENSI KELAYAKAN MALAYSIA

2014 NATIONAL

## 10. PENILAI AKREDITASI PENUH FOUNDATION IN SCIENCE IN COLLABORATION WITH HELP UNIVERSITY INSTITUT SAINS DAN PENGURUSAN SABAH

AGENSI KELAYAKAN MALAYSIA

2014 NATIONAL

## 11. PENILAI AKREDITASI DIPLOMA SAINS GUNAAN UNIVERSITI TUN HUSSEIN ONN

AGENSI KELAYAKAN MALAYSIA

2014 NATIONAL

## 12. PENILAI AKREDITASI SEMENTARA SARJANA SAINS (FIZIK GUNAAN) UNIVERSITI TUN HUSSEIN ONN

AGENSI KELAYAKAN MALAYSIA (MQA)

2013 NATIONAL

## 13. PENILAI AKREDITASI SARJANA SCIENCE (MOD PENYELIDIKAN) UNIVERSITI TUN HUSSEIN ONN

AGENSI KELAYAKAN MALAYSIA (MQA)

2013 NATIONAL

**14. PENILAI AKREDITASI BACHELOR OF SCIENCE (HONOURS) APPLIED PHYSICS WITH SCIENTIFIC INSTRUMENTATION KOLEJ UNIVERSITI TUNKU ABDUL RAHMAN KUALA LUMPUR**

AGENSI KELAYAKAN MALAYSIA (MQA)

2013

NATIONAL

# CONSULTATION

---

## 15. PENILAI AKREDITASI DIPLOMA SAINS UNIVERSITI PENDIDIKAN SULTAN IDRIS (UPSI)

AGENSI KELAYAKAN MALAYSIA (MQA)

2013 NATIONAL

## 16. PENILAI AKREDITASI FOUNDATION IN SCIENCE KOLEJ SEGI SARAWAK

AGENSI KELAYAKAN MALAYSIA (MQA)

2013 NATIONAL

## 17. PENILAI AKREDITASI SEMENTARA FOUNDATION IN SCIENCE MURNI INTERNATIONAL COLLEGE

AGENSI KELAYAKAN MALAYSIA (MQA)

2013 NATIONAL

## 18. PENILAI AKREDITASI PROVISIONAL AGENSI KELAYAKAN MALAYSIA (MQA) DIPLOMA SAINS GUNAAN, UNIVERSITI TUN HUSSEIN ONN, JOHOR

AGENSI KELAYAKAN MALAYSIA (MQA)

2011 NATIONAL

## 19. PENILAI AKREDITASI PROVISIONAL AGENSI KELAYAKAN MALAYSIA (MQA) FOUNDATION IN SCIENCE, KOLEJ SURIA PJ.

AGENSI KELAYAKAN MALAYSIA (MQA)

2011 NATIONAL

## 20. PENILAI SAINS FIZIK AGENSI KELAYAKAN MALAYSIA (MQA)

AGENSI KELAYAKAN MALAYSIA (MQA)

2011 NATIONAL

## 21. PENILAI AKREDITASI IJAZAH SARJANA MUDA PERGURUAN DENGAN KEPUJIAN IPG KAMPUS DARUL AMAN

AGENSI KELAYAKAN MALAYSIA (MQA)

2010 NATIONAL

## 22. PENILAI AKREDITASI FOUNDATION IN SCIENCE KOLEJ UNIVERSITI HELP, DAMANSARA KL

AGENSI KELAYAKAN MALAYSIA (MQA)

2010 NATIONAL

## 23. PENILAI AKREDITASI FOUNDATION IN SCIENCE SEGI UNIVERSITY COLLEGE

AGENSI KELAYAKAN MALAYSIA (MQA)

2009 NATIONAL

## 24. PENILAI AKREDITASI FOUNDATION IN SCIENCE INSTITUT NIRAWANA

AGENSI KELAYAKAN MALAYSIA (MQA)

2009 NATIONAL

# AWARDS/RECOGNITION

---

## 1. CELF BIOFILM GREEN ELECTROLYTE FOR PROTON BATTERY

Malaysia Technology Expo (MTE) 2023

2023 ANTARABANGSA SILVER

## 2. CELF BIO-FILM: GREEN ELECTROLYTE FOR PROTON BATTERY

34th INTERNATIONAL INVENTION & TECHNOLOGY EXHIBITION MALAYSIA (ITEX2023)

2023 ANTARABANGSA GOLD

## 3. CELF, GREEN CONDUCTING ELECTROLYTE

INVENTION, INNOVATION & DESIGN EXPOSITION 2023 (IIDEX 2023)

2023 ANTARABANGSA SILVER

## 4. ACADEMIC ADVISOR

UNIVERSITI PENDIDIKAN SULTAN IDRIS

2022 NATIONAL

## 5. CELF BIOFILM: PROTON CONDUCTING CELLULOSE BASED ELECTROLYTES

INNOVATION BANK CHALLENGE (IBC 2022)

2022 UNIVERSITI GOLD

## 6. ACADEMIC ADVISOR

UNIVERSITI PENDIDIKAN SULTAN IDRIS

2019 NATIONAL

## 7. TOP 100 RESEARCHERS USIM ( 2013-2017)

TOP 100 RESEARCHERS

2018 UNIVERSITI CERTIFICATE OF APPRECIATION

## 8. CULTIVATING INNOVATION AND CREATIVITY CULTURE

THE 1(st) INTERNATIONAL MALAYSIA - INDONESIA - THAILAND SYMPOSIUM ON INNOVATION AND CREATIVITY (IMIT

2017 UNIVERSITI SILVER

## 9. ANUGERAH PERKHIDMATAN CEMERLANG 2016

2016 UNIVERSITY

## 10. ANUGERAH PERKHIDMATAN CEMERLANG 2010

2010 UNIVERSITY

## 11. ANUGERAH PERKHIDMATAN CEMERLANG 2008

2008 UNIVERSITY