



## DR. SHAHNURRIMAN BIN ABDUL RAHMAN

PENSYARAH UNIVERSITI DS13

### CONTACT

**Phone:** 88782

**E-mail:**

shahnurriman@usim.edu.my

**Faculty:** Fakulti

Kejuruteraan Dan Alam

Bina

### SUPERVISION

PhD - Completed: 0, Ongoing: 0

Master - Completed: 0,  
Ongoing: 2

### AREAS OF EXPERTISE

Thermodynamics

Power Electronics

Power System

Electricity Transmission

### ACADEMIC QUALIFICATION

PhD in Electrical & Electronic Engineering (2019)

Master in Kejuruteraan (elektrik - Kuasa) (2012)

Bachelor in Kejuruteraan (elektrik) (2010)

### RESEARCH

#### 1. DEVELOPING A FUNDAMENTAL FRAMEWORK FOR AI-BASED TRANSFORMER FAULT DIAGNOSIS USING DISSOLVED GAS ANALYSIS

2026 GERAN PENYELIDIKAN FUNDAMENTAL ON GOING CO-RESEARCHER

#### 2. INVESTIGATION OF THE IMPACT OF CORROSIVE SULFUR ON THE DIELECTRIC PERFORMANCE OF SUSTAINABLE ESTER-BASED TRANSFORMER OILS

2026 GERAN PENYELIDIKAN FUNDAMENTAL ON GOING CO-RESEARCHER

#### 3. ADVANCING BATTERY MONITORING SYSTEM WITH STATE-OF-HEALTH METRIC AT JAYALAX RESOURCES

2025 GERAN KPT ON GOING MAIN RESEARCHER

#### 4. SMART AQUAGUARD: IOT-POWERED WATER QUALITY MONITORING FOR SUSTAINABLE AQUATIC MANAGEMENT

2025 GERAN KPT ON GOING CO-RESEARCHER

## 5. AUTOMATED MACHINE LEARNING SYSTEM FOR INSTALLATION, OPERATION AND MAINTENANCE OF SOLAR PROJECTS USING SATELLITE AND DRONE IMAGERY

2025

GERAN KPT

ON GOING

CO-RESEARCHER

# RESEARCH

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## 6. SMART AQUAGUARD: IOT-POWERED WATER QUALITY MONITORING FOR SUSTAINABLE AQUATIC MANAGEMENT

2025 GERAN PENYELIDIKAN INDUSTRI ON GOING CO-RESEARCHER

## 7. INTEGRATING BATTERY MONITORING SYSTEM WITH THE STATE-OF-HEALTH METRIC AT JAYALAX RESOURCES

2025 GERAN PENYELIDIKAN INDUSTRI ON GOING MAIN RESEARCHER

## 8. AUTOMATED MACHINE LEARNING SYSTEM FOR INSTALLATION, OPERATION AND MAINTENANCE OF SOLAR PROJECTS USING SATELLITE AND DRONE IMAGERY

2025 GERAN PENYELIDIKAN INDUSTRI ON GOING CO-RESEARCHER

## 9. DELAY-AWARE PREDICTIVE CONTROL OF A UAV FOR AUTONOMOUS POWER LINE- GUIDED INSPECTION

2025 GERAN KPT ON GOING CO-RESEARCHER

## 10. IOT BASED SECURED VOICE COMMUNICATION THROUGH ULTRASONIC FENCE

2024 GERAN KPT ON GOING CO-RESEARCHER

## 11. SALAH CHAIR

2023 GERAN PENYELIDIKAN LAB2MARKET ON GOING CO-RESEARCHER

## 12. BATTERY MONITORING SYSTEM FOR GENERATOR SETS

2022 GERAN PENYELIDIKAN AGENSI KERAJAAN COMPLETED MAIN RESEARCHER

## 13. CORROSION-AMPACITY MODELLING FOR AMPACITY PERFORMANCE INDEX FORMULATION ON OVERHEAD CONDUCTORS

2022 GERAN KPT ON GOING MAIN RESEARCHER

## 14. RESOURCE MANAGEMENT OPTIMIZATION IN 6G NETWORK FOR SMART GRID COMMUNICATIONS USING DEEP LEARNING

2022 GERAN PENYELIDIKAN USIM ON GOING CO-RESEARCHER

## 15. DEVELOPMENT OF DATA BASED ENERGY EFFICIENCY MANAGEMENT SYSTEM AT KAMPUS BAROKAH USIM FOR COST EFFECTIVE PRACTISE USING PREDICTIVE AND MACHINE LEARNING CAPABILITY

2022 GERAN PENYELIDIKAN USIM ON GOING CO-RESEARCHER

## 16. DEVELOPMENT OF MOBILE APPLICATION FOR "EDUCATIONAL GAMES FOR KIDS WITH LEARNING DISABILITIES: KID WONDERS - KINDERS"

2022 GERAN PENYELIDIKAN AGENSI KERAJAAN COMPLETED CO-RESEARCHER

## 17. INVESTIGATION OF INDUCED VOLTAGE ON UNDERGROUND TRANSMISSION CABLES WITHIN LINE CORRIDORS FOR URBAN PLANNING.

2021 GERAN KPT COMPLETED CO-RESEARCHER

## 18. STUDY OF RAINFALL EFFECT TO OPTIMIZE POWER LINES PERFORMANCE

2020 GERAN PENYELIDIKAN USIM RACER COMPLETED MAIN RESEARCHER

## 19. 3D PRINTED EMERGENCY DEVICE (VENTILATOR)

2020 GERAN PENYELIDIKAN COVID-19 COMPLETED CO-RESEARCHER

## 20. AUTOMATIC DISINFECTION CHAMBER

2020 GERAN PENYELIDIKAN COVID-19 COMPLETED CO-RESEARCHER

## 21. MODELLING AND CONTROL OF AN AERIAL TRANSPORTATION SYSTEM CARRYING SUSPENDED PAYLOAD

2020 GERAN PENYELIDIKAN USIM RACER COMPLETED CO-RESEARCHER

# RESEARCH

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## 22. DESIGN AND DEVELOPMENT OF PERSONAL PROTECTIVE EQUIPMENT (PPE) BOX FOR HEALTHCARE APPLICATION

2020 GERAN PENYELIDIKAN COVID-19 COMPLETED CO-RESEARCHER

## 23. A NEW PARAMETRIC MODULE OF THERMAL AND LIGHTING BASED ON SOLAR CELL FACADE SYSTEM IN SCHOOL

2020 GERAN KPT COMPLETED CO-RESEARCHER

## 24. MODELLING OF QUANTUM BASED TUNNEL DIODE FOR THZ MEDICAL IMAGING

2019 GERAN PENYELIDIKAN USIM COMPLETED CO-RESEARCHER

## 25. SURVIVORS IDENTIFICATION AND LOCALIZATION FOR SAR ROBOTICS SYSTEM USING MACHINE LEARNING

2019 GERAN SEPADAN AGENSI KERAJAAN COMPLETED CO-RESEARCHER

# PUBLICATION

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## 1. THERMAL CHARACTERISTICS OF TRAPEZOIDAL OVERHEAD CONDUCTORS EXPOSED TO GALVANIC CORROSION

JOURNAL OF ADVANCED RESEARCH IN FLUID MECHANICS AND THERMAL SCIENCES

2025 JOURNAL OTHER DATABASE CORRESPONDING AUTHOR

## 2. I-V CHARACTERISTICS OF GAAS/ALAS ASYMMETRIC SPACER LAYER TUNNEL DIODE (ASPAT) USING STATISTICAL VALIDATION

JOURNAL OF SCIENCE AND TECHNOLOGY

2025 JOURNAL MYCITE CO-AUTHOR

## 3. REVIEW ON CORROSION DEVELOPMENT AND STUDIES ON OVERHEAD LINE CONDUCTORS

POSTGRADUATE AND INDUSTRY RESEARCH COLLOQUIUM 2024 (PIRC)

2025 PROCEEDING NON-INDEX CO-AUTHOR

## 4. IMAGE DETECTION AND CLASSIFICATION FOR MONITORING OF PHOTOVOLTAIC PANEL OPERATION AND MAINTENANCE

2025 MULTIMEDIA UNIVERSITY ENGINEERING CONFERENCE (MECON)

2025 PROCEEDING SCOPUS CO-AUTHOR

## 5. EVALUATION OF SURGE PROTECTIVE DEVICES (SPD) ON PHOTOVOLTAIC (PV) SYSTEM INSTALLATIONS: MITIGATING THE IMPACT OF LIGHTNING STRIKES

2025 IEEE 5TH INTERNATIONAL CONFERENCE IN POWER ENGINEERING APPLICATIONS (ICPEA)

2025 PROCEEDING SCOPUS CO-AUTHOR

## 6. GALVANIC CORROSION PROGRESSION ANALYSIS AT ALUMINIUM-CARBON FIBER INTERFACES IN ACCC/TW CONDUCTORS

SYSTEMS MODELLING AND SIMULATION (SMS 2024)

2025 CHAPTER IN BOOK CO-AUTHOR

## 7. ENHANCING THE CULTIVATION OF MOINA SP.: AN INTEGRATION OF AERATION SYSTEM WITH GREEN WATER DETECTION AND PH MONITORING

PRZEGLAD ELEKTROTECHNICZNY

2024 JOURNAL SCOPUS CO-AUTHOR

## 8. ANALYSIS OF UNDERGROUND TRANSMISSION CABLE AMPACITY FOR ON-SITE APPLICATIONS

JOURNAL OF ELECTRICAL AND ELECTRONIC SYSTEMS RESEARCH

2024 JOURNAL MYCITE CO-AUTHOR

## 9. ASSESSING THE IMPACT OF GALVANIC CORROSION ON THE PERFORMANCE OF ACSR/TW AND ACCC/TW CONDUCTORS

2024 IEEE 4TH INTERNATIONAL CONFERENCE IN POWER ENGINEERING APPLICATIONS (ICPEA)

2024 PROCEEDING SCOPUS CO-AUTHOR

## 10. DEVELOPMENT OF BATTERY MONITORING SYSTEM FOR POWER GENERATORS: INSIGHTS AND EXPERIENCE

2024 POSTGRADUATE AND INDUSTRY RESEARCH COLLOQUIUM (PIRC)

2024 PROCEEDING NON-INDEX CO-AUTHOR

## 11. ANALYSIS OF ELECTRIC FIELD ON OVERHEAD DISTRIBUTION LINE DUE TO LIGHTNING STRIKE

2024 POSTGRADUATE AND INDUSTRY RESEARCH COLLOQUIUM (PIRC)

2024 PROCEEDING NON-INDEX CO-AUTHOR

## 12. PALM OIL AS A TRANSFORMER INSULATING FLUID: A REVIEW

2024 POSTGRADUATE AND INDUSTRY RESEARCH COLLOQUIUM (PIRC)

2024 PROCEEDING NON-INDEX CO-AUTHOR

## 13. HIGH-TEMPERATURE LOW SAG CONDUCTOR: THE NEW TREND TO TRANSMIT ELECTRICITY

ADVANCEMENT IN ENGINEERING AND TECHNOLOGY

2024 CHAPTER IN BOOK MAIN AUTHOR

# PUBLICATION

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## 14. IOT BASED INDOOR AIR AND WATER QUALITY MONITORING SYSTEM USING NODE-RED

9TH INTERNATIONAL CONFERENCE ON COMPUTER AND COMMUNICATION ENGINEERING (ICCCCE 2023)

2023 PROCEEDING SCOPUS MAIN AUTHOR

## 15. DESIGN OF SINGLE STAGE C BAND ERBIUM DOPED FIBER AMPLIFIER (EDFA) FOR OPTICAL COMMUNICATION

TECHNOLOGIES IN SCIENCE AND ENGINEERING : A MULTIDISCIPLINARY APPROACH

2023 CHAPTER IN BOOK CO-AUTHOR

## 16. COMPARISON TECHNIQUES FOR OPTIMIZATION SWITCHING FREQUENCY IN ENERGY ENCRYPTION OF WIRELESS POWER TRANSFER SYSTEM

JOURNAL OF ADVANCED RESEARCH IN APPLIED SCIENCES AND ENGINEERING TECHNOLOGY

2022 JOURNAL MYCITE CO-AUTHOR

## 17. ADVANCING OHL RATING CALCULATIONS: MODELING MIXED-CONVECTIVE COOLING AND CONDUCTOR GEOMETRY

IEEE TRANSACTIONS ON POWER DELIVERY

2022 JOURNAL ISI MAIN AUTHOR

## 18. COMPARISON TECHNIQUES FOR OPTIMIZATION SWITCHING FREQUENCY IN ENERGY ENCRYPTION OF WIRELESS POWER TRANSFER SYSTEM

JOURNAL OF ADVANCED RESEARCH IN APPLIED SCIENCES AND ENGINEERING TECHNOLOGY

2022 JOURNAL OTHER DATABASE CO-AUTHOR

## 19. EXAMINING THE IMPORTANCE OF CONDUCTOR SURFACE TRAIT ON AMPACITY DETERMINATION

2022 IEEE INTERNATIONAL CONFERENCE IN POWER ENGINEERING APPLICATION (ICPEA)

2022 PROCEEDING NON-INDEX MAIN AUTHOR

## 20. AN ILLEGAL DUMPING DETECTION SYSTEM BASED ON IMAGE PROCESSING IN OPENALPR

ASM SCIENCE JOURNAL

2021 JOURNAL SCOPUS CO-AUTHOR

## 21. THE BENEFIT OF RAIN ON ELECTRICAL POWER DELIVERY

THE 7TH INTERNATIONAL CONFERENCE ON QURAN AS FOUNDATION OF CIVILISATION (SWAT2021)

2021 PROCEEDING NON-INDEX CORRESPONDING AUTHOR

## 22. BLUEPRINT KELESTARIAN USIM: MENYEMARKKAN KAMPUS BARAKAH

2021 BOOK CO-AUTHOR

## 23. ANALYSIS OF CURRENT-VOLTAGE CHARACTERISTICS ASSOCIATED TO THE QUANTUM STRUCTURE OF ASYMMETRIC SPACER LAYER TUNNEL DIODE (ASPAT): A PROMISING TERAHERTZ DEVICES

ADVANCES IN SUSTAINABLE LIVING: ENGINEERING AND TECHNOLOGY

2021 CHAPTER IN BOOK CO-AUTHOR

## 24. IMPROVING ELECTRO-THERMAL CALCULATION OF OVERHEAD LINES CONDUCTORS FOR MORE ON-GRID RENEWABLE ENERGY RESOURCES

ADVANCES IN SUSTAINABLE LIVING: ENGINEERING AND TECHNOLOGY

2021 CHAPTER IN BOOK MAIN AUTHOR

## 25. EFFECT OF THE DOPING CONCENTRATION AND JUNCTION DEPTH ON THE PERFORMANCE OF SOLAR CELLS

ADVANCES IN SUSTAINABLE LIVING: ENGINEERING AND TECHNOLOGY

2021 CHAPTER IN BOOK CO-AUTHOR

## 26. EMOTION DETECTION BASED ON AUDIO/VOICE SIGNAL FOR AUTISM SPECTRUM DISORDER (ASD) USING CORRELATION METHOD

ADVANCES IN SUSTAINABLE LIVING: ENGINEERING AND TECHNOLOGY

2021 CHAPTER IN BOOK CO-AUTHOR

# PUBLICATION

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## 27. RADIO OVER FIBRE FREE SPACE OPTICS (ROFSO) SYSTEM

ADVANCES IN SUSTAINABLE LIVING: ENGINEERING AND TECHNOLOGY

2021 CHAPTER IN BOOK CO-AUTHOR

## 28. EFFECT OF THE SLOT SHAPE AND GROUND PLANE ON THE MICROSTRIP PATCH ANTENNA PERFORMANCE

ADVANCES IN SUSTAINABLE LIVING: ENGINEERING AND TECHNOLOGY

2021 CHAPTER IN BOOK CO-AUTHOR

## 29. APPLICATION OF FINITE ELEMENT METHOD (FEM) IN THE ELECTRICAL SAFETY ASSESSMENT

ADVANCES IN SUSTAINABLE LIVING: ENGINEERING AND TECHNOLOGY

2021 CHAPTER IN BOOK CO-AUTHOR

## 30. IMPACT OF IDEALITY FACTOR AND SEMICONDUCTING MATERIAL ON PV MODULE PERFORMANCES

SEMINAR ANTARABANGSA ISLAM DAN SAINS (SAIS 2020)

2020 PROCEEDING NON-INDEX MAIN AUTHOR

## 31. DESIGN OF A LOW-COST AUTOMATIC DISINFECTION CHAMBER

SEMINAR ANTARABANGSA ISLAM DAN SAINS (SAIS 2020)

2020 PROCEEDING NON-INDEX CO-AUTHOR

## 32. DC ANALYSIS OF GAAS/ALAS SINGLE BARRIER ASYMMETRIC SPACER TUNNEL DIODE

SEMINAR ANTARABANGSA ISLAM DAN SAINS (SAIS 2020)

2020 PROCEEDING NON-INDEX CO-AUTHOR

## 33. AUTOMATED MOTION DETECTION SECURITY SYSTEM NOTIFIER USING RASPBERRY PI WITH TELEGRAM

2020 IEEE SYMPOSIUM ON INDUSTRIAL ELECTRONICS & APPLICATIONS (ISIEA)

2020 PROCEEDING NON-INDEX CO-AUTHOR

## 34. FINITE ELEMENT MODELING OF OVERHEAD LINE THERMAL RATING METHOD

INTERNATIONAL SEMINAR ON ISLAM AND SCIENCE 2019 (SAIS2019)

2019 PROCEEDING NON-INDEX MAIN AUTHOR

## 35. NON-EQUILIBRIUM GREENS FUNCTION ON GAAS/ALAS DOUBLE BARRIER QUANTUM WELLS RESONANT TUNELLING DIODE

INTERNATIONAL SEMINAR ON ISLAM AND SCIENCE 2019

2019 PROCEEDING NON-INDEX CO-AUTHOR

## 36. PERFORMANCE ANALYSIS OF SISO AND MISO FSO COMMUNICATION UNDER MALAYSIA WEATHER CONDITION BY EMPLOYING OPTISYSTEM

INTERNATIONAL SEMINAR ON ISLAM AND SCIENCE 2019 (SAIS 2019)

2019 PROCEEDING NON-INDEX CO-AUTHOR

## 37. STUDY OF THE FLOW AROUND A HEATED CYLINDER IN MIXED CONVECTION REGIME

DIRECT AND LARGE-EDDY SIMULATION XI

2019 CHAPTER IN BOOK CO-AUTHOR

## 38. EFFECT OF LARGE SCALE 3-D STRUCTURES ON THE FLOW AROUND A HEATED CYLINDER AT LOW REYNOLDS NUMBER

FLOW, TURBULENCE AND COMBUSTION

2018 JOURNAL SCOPUS CO-AUTHOR

## 39. THERMAL STATE ANALYSIS ON BUNDLED OVERHEAD LINE CONDUCTORS

MEDITERRANEAN CONFERENCE ON POWER GENERATION, TRANSMISSION, DISTRIBUTION AND ENERGY CONVERSION (MEDPOWER 2018)

2018 PROCEEDING NON-INDEX MAIN AUTHOR

# PUBLICATION

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## 40. IMPACT OF SIMPLIFIED CONVECTION MODEL IN OVERHEAD LINES THERMAL RATING CALCULATION METHODS

2018 IEEE/PES TRANSMISSION AND DISTRIBUTION CONFERENCE AND EXPOSITION (T&D)

2018

PROCEEDING

NON-INDEX

MAIN AUTHOR

## 41. MODELLING OF CONVECTIVE COOLING ON CONDUCTOR THERMAL RATING METHODS

2017 IEEE MANCHESTER POWERTECH

2017

PROCEEDING

NON-INDEX

MAIN AUTHOR

# CONSULTATION

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## 1. BATTERY STORAGE MANAGEMENT SYSTEM (BSMS) AND TECHNICAL KNOWLEDGE TRAINING

TECHNOPRENEUR UNIMAP SDN BHD

2021

NATIONAL

# AWARDS/RECOGNITION

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## 1. MUSOLLI COMPANION

4TH INNOVATION BANK CHALLENGE 2024 (IBC 2024)

2024 UNIVERSITI BRONZE

## 2. BATTERY MONITORING SYSTEM FOR GENERATOR SETS

RESEARCH SEMINAR UNIVERSITI SAINS ISLAM MALAYSIA

2024 UNIVERSITI CERTIFICATE OF APPRECIATION

## 3. PRODUCTIVITY CHAMPION

2023 NATIONAL

## 4. IOT- BASED BATTERY MONITORING SYSTEM

PERTANDINGAN REKACIPTA INOVASI INTERNASIONAL & NASIONAL 2022 (PRIIN 2022)

2022 ANTARABANGSA SILVER

## 5. ICE BOX (INDOOR, COMFORT, ENVIRONMENT)

Persidangan dan Ekspo Ciptaan Institusi Pengajian Tinggi Antarabangsa (PECIPTA22)

2022 ANTARABANGSA GOLD