

Profile Image

## PROF. MADYA DR. ERNIE SUZANA BINTI ALI

PENSYARAH UNIVERSITI DS14

### CONTACT

**Phone:** 6425

**E-mail:**  
ernie@usim.edu.my

**Faculty:** Fakulti Sains  
Dan Teknologi

### SUPERVISION

PhD - Completed: 1, Ongoing: 0

Master - Completed: 0,  
Ongoing: 0

## AREAS OF EXPERTISE

Polymer-based Composites

Bio-composites

Polymeric Adhesive, Coating And Ink

## ACADEMIC QUALIFICATION

PhD in Sains Bahan (2008)

Master in Sains Bahan (2003)

Bachelor in Sains Bahan (2001)

## RESEARCH

**1. UNRAVELLING THE RADIATION ATTENUATION AND SKIN SHIELDING PROPERTIES OF BISMUTH OXIDE-FORMULATED GLOVES AND HAND CREAMS VIA THERMOLUMINESCENCE DOSIMETRY CHIPS**

2024 GERAN KPT ON GOING CO-RESEARCHER

**2. INVESTIGATING THE DE-AND-RE-POLYMERIZATION ON CHAIN EXTENSION OF RECYCLED PET FOR HIGH PERFORMANCE 3D PRINTING MATERIAL**

2024 GERAN KPT ON GOING CO-RESEARCHER

**3. SUSTAINABLE SMART HYBRID NANOCOMPOSITES POLYURETHANE USING 4D PRINTING**

2022 GERAN ANTARABANGSA ON GOING MAIN RESEARCHER

**4. ELECTROMAGNETIC WAVE ABSORPTION MECHANISM OF HYBRID NANO-COMPOSITE-3D**

2020 GERAN KPT COMPLETED CO-RESEARCHER

**5. LOW COST 3D PRINTED HONEYCOMB-TERMINALIA  
CATAPPA FRUIT SHELLS COMPOSITES AS AN ABSORBING  
MATERIALS IN REDUCING ELECTROMAGNETIC  
INTERFERENCE POLLUTION**

2020

GERAN PENYELIDIKAN USIM RACER

COMPLETED

CO-RESEARCHER

# RESEARCH

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## 6. MECHANISM OF SHAPE MEMORY PROPERTIES BY CELLULOSE NANOCRYSTAL (CNC) IN PALM OIL BASED POLYOL

2017 GERAN ANTARABANGSA COMPLETED MAIN RESEARCHER

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

2016 GERAN KPT COMPLETED CO-RESEARCHER

## 8. SMART COATING FROM PALM OIL BASED ACRYLIC-POLYURETHANE

2016 GERAN PENYELIDIKAN TRANSNASIONAL COMPLETED MAIN RESEARCHER

## 9. DETERMINATION OF ZT FOR SEGMENTED THERMOELECTRIC GENERATOR (TEG) UNDER LARGE TEMPERATURE DIFFERENCE (L<sub>?</sub>T) USING "OPEN-SHORT CIRCUIT" TECHNIQUE

2015 GERAN KPT COMPLETED CO-RESEARCHER

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

2013 GERAN PENYELIDIKAN USIM COMPLETED CO-RESEARCHER

## 11. IMMOBILIZED METAL COMPLEXES ON MONTMORILLONITE AS HETEROGENEOUS CATALYST FOR EPOXIDATION OF PALM OIL.

2012 GERAN KPT COMPLETED CO-RESEARCHER

## 12. PENGGUNAAN MEDIA BARU DI KALANGAN KELUARGA MUSLIM

2012 GERAN KPT COMPLETED CO-RESEARCHER

## 13. DEVELOPMENT OF AN ALTERNATIVE MATERIAL FOR HYDROGEN STORAGE DERIVED FROM MONTMORILLONITE NANOCALY

2012 GERAN PENYELIDIKAN USIM COMPLETED CO-RESEARCHER

## 14. SELF SENSING ACTUATOR MADE FROM THE CELLULOSE NANOCRYSTAL (CNC) AND BIO-BASED SHAPE MEMORY POLYURETHANE (SMPU)

2012 GERAN KPT COMPLETED MAIN RESEARCHER

## 15. BIOCOMPATIBILITY OF BIO-BASED SHAPE MEMORY POLYURETHANE NANOCOMPOSITE FOR BIOMEDICAL APPLICATION

2012 GERAN PENYELIDIKAN PENTADBIR COMPLETED MAIN RESEARCHER

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

2011 GERAN PENYELIDIKAN FUNDAMENTAL COMPLETED CO-RESEARCHER

## 17. BIOSORPTIONS OF HEAVY METALS FROM AQUEOUS SOLUTION BY DESSICATED COCONUT RESIDUE: CHARACTERIZATION,

2011 GERAN PENYELIDIKAN FUNDAMENTAL COMPLETED CO-RESEARCHER

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

2011 GERAN KPT COMPLETED MAIN RESEARCHER

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

2011 GERAN PENYELIDIKAN FUNDAMENTAL COMPLETED MAIN RESEARCHER

## 20. FUNDAMENTAL STUDIES ON THE FABRICATION OF NANOPARTICLE MODIFIED GREEN POLYURETHANE ADHESIVES

2009 GERAN KPT COMPLETED MAIN RESEARCHER

## 21. MECHANICAL AND THERMAL CHARACTERIZATION OF IN-HOUSE INSULATOR USING PALM OIL POLYOL AND KENAF, HIBIS

2009 GERAN PENYELIDIKAN FUNDAMENTAL COMPLETED MAIN RESEARCHER

# PUBLICATION

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## 1. ENHANCED THERMAL AND TENSILE BEHAVIOR OF MWCNT REINFORCED PALM OIL POLYOL-BASED SHAPE MEMORY POLYURETHANE

ARABIAN JOURNAL OF CHEMISTRY

2022 JOURNAL ISI CO-AUTHOR

## 2. MECHANICAL PROPERTIES OF GREEN AND PETROLEUM BASED POLYURETHANE AS GROUTING MATERIALS

JOURNAL OF MECHANICAL ENGINEERING

2022 JOURNAL SCOPUS CO-AUTHOR

## 3. PREPARATION METHODS OF BIOFIBER-BASED POLYMER COMPOSITES

ADVANCES IN BIO-BASED FIBER - MOVING TOWARDS A GREEN SOCIETY

2022 CHAPTER IN BOOK CO-AUTHOR

## 4. PREPARATION OF CASTOR-BASED POLYURETHANE COMPOSITES FILLED WITH WASTE CARBON TYRES (WCT) AS GROUTING MATERIAL

JURNAL TEKNOLOGI

2020 JOURNAL SCOPUS MAIN AUTHOR / CONTACT PERSON IN USIM

## 5. THERMO-RESPONSIVE SELF-HEALING POLYCAPROLACTONE URETHANE COATINGS FROM WASTE PALM COOKING OIL

INTERNATIONAL JOURNAL OF ENGINEERING AND ADVANCED TECHNOLOGY

2019 JOURNAL SCOPUS CO-AUTHOR

## 6. EFFECT OF NCO/OH RATIO ON PHYSICAL AND MECHANICAL PROPERTIES OF CASTOR-BASED POLYURETHANE GROUTING MATERIALS

JOURNAL OF PHYSICS: CONFERENCE SERIES

2019 JOURNAL SCOPUS CO-AUTHOR

## 7. SCRATCH HARDNESS PROPERTIES OF WASTE PALM COOKING OIL BASED POLYCAPROLACTONE URETHANE COATINGS

MATERIALS SCIENCE FORUM

2019 JOURNAL ERA CO-AUTHOR

## 8. CONTACT ANGLE PROPERTIES OF BIOACRYLIC PALM OIL BASED POLYOL FOR POLYURETHANE COATING

MATERIALS SCIENCE FORUM

2019 JOURNAL ERA MAIN AUTHOR

## 9. INCORPORATION OF PALM OIL POLYOL IN SHAPE MEMORY POLYURETHANE: IMPLICATION FOR DEVELOPMENT OF CARDIOVASCULAR STENT

POLYMERS FOR ADVANCED TECHNOLOGIES

2018 JOURNAL WOS CO-AUTHOR

## 10. 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

## 11. CONTACT ANGLE PROPERTIES OF BIOACRYLIC PALM OIL BASED POLYOL FOR POLYURETHANE COATING

2018 3RD INTERNATIONAL CONFERENCE ON MATERIALS TECHNOLOGY AND APPLICATIONS (ICMTA 2018)

2018 PROCEEDING NON-INDEX MAIN AUTHOR

## 12. THE EFFECT OF POLYOL TYPES AND MOLECULAR WEIGHT ON THE SHAPE MEMORY PROPERTIES OF PALM KERNEL OIL-BASED POLYURETHANE

6TH INTERNATIONAL CONFERENCE ON RECENT ADVANCES IN MATERIALS, MINERALS & ENVIRONMENT (RAMM) 2018, RAMM 2018, 27 - 29 NOVEMBER 2018, PENANG, MALAYSIA

2018 PROCEEDING NON-INDEX CO-AUTHOR

## 13. INTERNATIONAL JOURNAL OF ENGINEERING AND TECHNOLOGY(UAE)

2018 BOOK CO-EDITOR

# PUBLICATION

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## 14. RECENT ADVANCEMENT ON APPLIED PHYSICS, INDUSTRIAL CHEMISTRY AND CHEMICAL TECHNOLOGY

2018 BOOK EDITOR

## 15. HYBRID BIOFOAM USING CELLULOSE NANOCRYSTAL (CNC) AND NANOCCLAY

MATERIALS TODAY: PROCEEDINGS

2017 JOURNAL SCOPUS MAIN AUTHOR

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

MATERIALS SCIENCE FORUM

2017 JOURNAL SCOPUS MAIN AUTHOR

## 17. EFFECT OF SOFT-HARD SEGMENT CONTENT ON PROPERTIES OF PALM OIL POLYOL BASED SHAPE MEMORY POLYURETHANE

AIP CONFERENCE PROCEEDINGS

2017 JOURNAL SCOPUS CO-AUTHOR

## 18. THE MECHANICAL PROPERTIES OF MEDIUM DENSITY RIGID POLYURETHANE BIOFOAM

MATEC WEB OF CONFERENCES

2016 JOURNAL SCOPUS MAIN AUTHOR

## 19. THERMAL AND MECHANICAL CHARACTERIZATIONS OF NANOCCLAY/ PALM OIL POLYOL BASED POLYURETHANE COMPOSITES

KEY ENGINEERING MATERIALS

2016 JOURNAL SCOPUS CO-AUTHOR

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

2016 4TH ASIA CONFERENCE ON MECHANICAL AND MATERIALS ENGINEERING (ACMME 2016)

2016 PROCEEDING NON-INDEX MAIN AUTHOR

## 21. HYBRID BIONANOCOMPOSITE MADE FROM PALM OIL

NATIONAL SYMPOSIUM OF POLYMERIC MATERIALS 2016 (NSPM 2106)

2016 PROCEEDING NON-INDEX MAIN AUTHOR

## 22. UTILIZATION OF PALM OIL TO SMART MATERIALS

POLYURETHANE

2016 CHAPTER IN BOOK MAIN AUTHOR

## 23. GREEN POLYURETHANE ADHESIVES FOR WOOD BONDING

ADVANCED MATERIALS RESEARCH

2015 JOURNAL SCOPUS CO-AUTHOR

## 24. THE MECHANICAL PROPERTIES OF MEDIUM DENSITY RIGID POLYURETHANE BIOFOAM

2ND INTERNATIONAL CONFERENCE ON MECHANICAL PROPERTIES OF MATERIALS(ICMPM 2015)

2015 PROCEEDING NON-INDEX MAIN AUTHOR

## 25. DURABILITY OF GREEN POLYURETHANE ADHESIVE BONDED ALUMINUM ALLOY IN DRY AND HYDROTHERMAL AGEING CONDITIONS

JOURNAL OF APPLIED POLYMER SCIENCE

2014 JOURNAL WOS CO-AUTHOR & CO-EDITOR

## 26. INFLUENCE OF ISOCYANATE STRUCTURES ON MECHANICAL PERFORMANCE OF ALUMINUM BONDED WITH GREEN POLYURETHANE ADHESIVE

ADVANCED MATERIALS RESEARCH

2014 JOURNAL SCOPUS CO-AUTHOR & CO-EDITOR

# PUBLICATION

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## 27. EFFECT OF SURFACE TREATMENTS ON THE DURABILITY OF GREEN POLYURETHANE ADHESIVE BONDED ALUMINIUM ALLOY

INTERNATIONAL JOURNAL OF ADHESION AND ADHESIVES

2014 JOURNAL WOS CO-AUTHOR & CO-EDITOR

## 28. PIONEERING ISLAMIC SCIENCE SPEARHEADING KNOWLEDGE

2014 BOOK EDITOR

## 29. FEASIBILITY STUDY OF $\diamond$ OPEN-SHORT CIRCUIT $\diamond$ DIMENSIONLESS FIGURE-OF-MERIT (ZT) MEASUREMENT TECHNIQUE FOR THERMOELECTRIC DEVICE

PIONEERING ISLAMIC SCIENCE, SPEARHEADING KNOWLEDGE

2014 CHAPTER IN BOOK CO-AUTHOR

## 30. SUPERCAPACITOR AS A RENEWABLE ENERGY AND ITS CONTRIBUTION TO UMMAH

PIONEERING ISLAMIC SCIENCE, SPEARHEADING KNOWLEDGE

2014 CHAPTER IN BOOK CO-AUTHOR

## 31. SHAPE MEMORY BIOPOLYURETHANE

PIONEERING ISLAMIC SCIENCE, SPEARHEADING KNOWLEDGE

2014 CHAPTER IN BOOK MAIN AUTHOR

## 32. PALM OIL POLYOL/ POLYURETHANE SHAPE MEMORY NANOCOMPOSITES

APPLIED MECHANICS AND MATERIALS

2013 JOURNAL SCOPUS CO-AUTHOR

## 33. GREEN POLYURETHANE ADHESIVE BONDING OF ALUMINUM: EFFECT OF SURFACE TREATMENTS

APPLIED MECHANICS AND MATERIALS

2013 JOURNAL SCOPUS CO-AUTHOR

## 34. NANOCCLAY MODIFIED GREEN POLYURETHANE ADHESIVES

BOND 21-JOINT INTERNATIONAL CONFERENCE ON NANOSCIENCE, ENGINEERING AND MANAGEMENT (ICNE (INTERNATIONAL CONFERENCE ON NANOELECTRONICS AND EDUCATION)

2013 PROCEEDING NON-INDEX CO-AUTHOR

## 35. OER@USIM

OPEN EDUCATIONAL RESOURCES IN MALAYSIAN HIGHER LEARNING INSTITUTIONS

2013 CHAPTER IN BOOK MAIN AUTHOR

## 36. POLYURETHANE/CLAY SHAPE MEMORY NANOCOMPOSITES BASED ON PALM OIL POLYOL

ADVANCED MATERIALS RESEARCH

2012 JOURNAL WOS CO-AUTHOR

## 37. BIONANOCOMPOSITE HYBRID POLYURETHANE FOAM REINFORCED WITH EMPTY FRUIT BUNCH AND NANOCCLAY

COMPOSITES: PART B

2012 JOURNAL WOS MAIN AUTHOR

## 38. CHARACTERISTICS OF HYDROLYSIS RESISTANT POLYCAPROLACTONE/PALM KERNEL OIL BASED POLYOL

ADVANCED MATERIALS RESEARCH

2012 JOURNAL SCOPUS CO-AUTHOR

## 39. CLAY REINFORCED HYPERBRANCHED POLYURETHANE NANOCOMPOSITES BASED ON PALM OIL POLYOL AS SHAPE MEMORY MATERIALS

ADVANCED MATERIALS RESEARCH

2012 JOURNAL WOS MAIN AUTHOR

# PUBLICATION

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## 40. CROSSLINKING OF PALM OIL POLYOL BASED SHAPE MEMORY POLYURETHANE

8TH ASIAN-AUSTRALASIAN CONFERENCE ON COMPOSITE MATERIALS (ACCM-8)

2012 PROCEEDING NON-INDEX MAIN AUTHOR

## 41. WEB 2.0@USIM

WEB 2.0 DI IPTA MALAYSIA

2012 CHAPTER IN BOOK MAIN AUTHOR

## 42. PROMISING MATERIALS MADE OF BIO-HYBRID POLYURETHANE

WORLD JOURNAL OF ENGINEERING

2011 JOURNAL WOS MAIN AUTHOR

## 43. PROMISING MATERIALS MADE OF BIO-HYBRID POLYURETHANE

ICCE 19 - THE NINETEENTH ANNUAL INTERNATIONAL CONFERENCE ON COMPOSITES OR NANO ENGINEERING

2011 PROCEEDING NON-INDEX MAIN AUTHOR

## 44. CLAY REINFORCED PALM OIL POLYOL/ POLYURETHANE SHAPE MEMORY NANOCOMPOSITES

THE REGIONAL CONFERENCE OF SOLID STATE SCIENCE AND TECHNOLOGY (RCSST)

2011 PROCEEDING NON-INDEX MAIN AUTHOR

## 45. BIONANOCOMPOSITE HYBRID FOAM:ITS MECHANISME

THE INTERNATIONAL CONFERENCE FOR NANOMATERIALS SYNTHESIS AND CHARACTERIZATION 2011

2011 PROCEEDING NON-INDEX MAIN AUTHOR

## 46. NOVEL HYBRID NANOCOMPOSITE POLYURETHANE BIOFOAM: THERMAL AND FIRE BEHAVIOUR

22ND PACIFIC SCIENCE CONGRESS

2011 PROCEEDING NON-INDEX MAIN AUTHOR

## 47. HYBRID BIONANOCOMPOSITE POLYURETHANE FOAM

MALAYSIAN NATURAL FIBRES FOR DIVERSE BIO-BASED APPLICATIONS

2011 CHAPTER IN BOOK MAIN AUTHOR

## 48. BIONANOCOMPOSITE HYBRID POLYURETHANE FOAM REINFORCED WITH EMPTY FRUIT BUNCH AND NANOCCLAY

7TH ASIAN-AUSTRALASIAN CONFERENCE ON COMPOSITE MATERIALS (ACCM-7)

2010 PROCEEDING NON-INDEX MAIN AUTHOR

## 49. HYBRID BIOFOAM AS AN INSULATOR

PROGRAMS AND ABSTRACT

2010 CHAPTER IN BOOK MAIN AUTHOR

# CONSULTATION

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## 1. JURI

MOSTI

2017

NATIONAL

## 2. JOURNAL REVIEWER - INDUSTRIAL CROPS AND PRODUCTS

2014

INTERNATIONAL

## 3. JOURNAL REVIEWER - MATERIALS LETTERS

ELSEVIER

2013

INTERNATIONAL

## 4. JOURNAL REVIEWER - INDUSTRIAL CROPS AND PRODUCTS

ELSEVIER

2013

INTERNATIONAL

## 5. E-LEARNING GUIDELINES FOR MALAYSIAN HEIS

KPM

2013

NATIONAL

## 6. KHIDMAT NASIHAT DAN PERUNDINGAN UJIAN REGANGAN KABEL FIBER OPTIK

SIGINIFICANT TECHNOLOGIES SDN BHD

2012

OTHERS

## 7. JOURNAL REVIEWER - MATERIALS LETTERS

ELSEVIER

2012

INTERNATIONAL

## 8. JOURNAL REVIEWER - MATERIALS LETTERS

ELSEVIER

2010

INTERNATIONAL

## 9. JOURNAL REVIEWER - JOURNAL OF TROPICAL AGRICULTURE AND FOOD SCIENCE (JTAFS)

MARDI

2010

NATIONAL

# AWARDS/RECOGNITION

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## 1. ANUGERAH PEKERJA CEMERLANG 2022

2023 UNIVERSITY

## 2. ACADEMIC ADVISOR

LEMBAGA TEKNOLOGIS MALAYSIA (MBOT)

2022 NATIONAL

## 3. ACADEMIC ADVISOR

UNIVERSITI TEKNOLOGI MARA

2022 NATIONAL

## 4. ACADEMIC ADVISOR

USIM

2022 UNIVERSITY

## 5. ACADEMIC ADVISOR

USIM

2022 UNIVERSITY

## 6. ACADEMIC ADVISOR

USIM

2021 UNIVERSITY

## 7. ACADEMIC ADVISOR

USIM

2021 UNIVERSITY

## 8. ACADEMIC ADVISOR

USIM

2021 UNIVERSITY

## 9. ACADEMIC ADVISOR

USIM

2021 UNIVERSITY

## 10. ACADEMIC ADVISOR

USIM

2021 UNIVERSITY

## 11. ACADEMIC ADVISOR

UNIKL

2021 NATIONAL

## 12. ACADEMIC ADVISOR

UNIKL

2021 NATIONAL

## 13. ACADEMIC ADVISOR

INSTITUTE FOR ENGINEERING RESEARCH AND PUBLICATION (IFERP)

2019 INTERNATIONAL

**14. TOP 100 RESEARCHERS USIM ( 2013-2017)**

TOP 100 RESEARCHERS

2018

UNIVERSITI

CERTIFICATE OF APPRECIATION

# AWARDS/RECOGNITION

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## 15. ANUGERAH PEKERJA CEMERLANG

2017 UNIVERSITY

## 16. ACADEMIC ADVISOR

UITM SHAH ALAM

2017 NATIONAL

## 17. TACTILE PAVEMENT FOR THE BLIND

NOVEL RESEARCH INNOVATION AND COMPETITION (NRIC 2016)

2016 KEBANGSAAN SILVER

## 18. POST DOCTORAL

2015 INTERNATIONAL

## 19. PENYELIDIK TERBAIK

2014 UNIVERSITY

## 20. POST DOCTORAL

2014 INTERNATIONAL

## 21. VISITING RESEARCHER

IBM ALMADEN RESEARCH CENTER, 650 HARRY ROAD, SAN JOSE, CA 95120-6099

2014 INTERNATIONAL

## 22. ANUGERAH PEKERJA CONTOH

2013 OTHERS

## 23. ANUGERAH KECEMERLANGAN PENYELIDIKAN

2013 UNIVERSITY

## 24. BIOBASED SHAPE MEMORY POLYURETHANE (SMPU) FOR BIOMEDICAL APPLICATION

23rd INTERNATIONAL INVENTION, INNOVATION & TECHNOLOGY EXHIBITION (ITEX2012)

2012 ANTARABANGSA SILVER

## 25. I-GREENELAST-II

EKSPO INOVASI ISLAM I-INNOVA 2012

2012 KEBANGSAAN SILVER

## 26. BIO-BASED SHAPE MEMORY POLYURETHANE FOR BIOMEDICAL APPLICATIONS

Ekspo Penyelidikan dan Ciptaan Institusi Pengajian Tinggi Antarabangsa 2011

2011 ANTARABANGSA CERTIFICATE OF APPRECIATION