

# ZURAIDA BT. AHMAD



- KULLIYAH OF ENGINEERING
- IIUM Gombak Campus
- Email address:  
[zuraidaa@iium.edu.my](mailto:zuraidaa@iium.edu.my)

## المؤهل العلمي

- Doctor of Philosophy
- Master of Science
- Bachelor of Engineering in Material Engineering

## مسؤوليات التدريس

ADVANCED MATERIALS CHARACTERIZATION	2007/2008 2012/2013
ADVANCED MATERIALS SCIENCE	2015/2016
CONTEMPORARY MATERIALS FOR ENGINEERING APPLICATIONS	2015/2016 2017/2018 2018/2019
ENGINEERING ETHICS FROM ISLAMIC PERSPECTIVE	2016/2017 2017/2018 2018/2019 2019/2020 2020/2021
ENGINEERING ETHICS SAFETY AND ENVIRONMENT	2015/2016 2016/2017 2017/2018 2018/2019 2019/2020
ENGINEERING MATERIALS	2005/2006 2006/2007 2007/2008 2008/2009 2012/2013
FAILURE ANALYSIS OF MATERIALS	2012/2013
FINAL YEAR PROJECT I	2018/2019 2019/2020
FINAL YEAR PROJECT II	2019/2020
FUNDAMENTALS OF MATERIALS ENGINEERING	2016/2017 2017/2018 2018/2019 2019/2020 2020/2021
INTEGRATED DESIGN PROJECT	2013/2014 2014/2015 2015/2016 2016/2017 2017/2018
ISLAMIZATION OF ENGINEERING STUDIES	2020/2021
Integrated Design Project	2018/2019 2019/2020
MATERIALS CHARACTERIZATION	2009/2010 2010/2011 2011/2012 2012/2013 2013/2014 2014/2015
MATERIALS LABORATORY	2006/2007 2007/2008
MATERIALS SCIENCE AND ENGINEERING	2012/2013

MECHANICS OF MATERIALS (LAB)	2004/2005
METALLIC MATERIALS	2007/2008 2008/2009 2009/2010 2010/2011 2011/2012
SEMINAR	2005/2006 2020/2021
SEMINAR I	2009/2010
WORKSHOP TECHNOLOGY	2004/2005 2005/2006 2006/2007

## المشاريع البحثية

### In Progress

- 2018 - Present** - Development of self-healing nanocoating via polyelectrolyte assemblies for corrosion protection applications.
- 2018 - Present** - Investigation On the Effectiveness of Various 'Green' Batik Wax Blends Extruded via Fused Deposition Modeling (FDM).
- 2018 - Present** - Poly (3,4-ethylenedioxythiophene):poly(styrene sulfonate)(PEDOT:PSS) doped Silver Nano Particle (SNP)conductive polymer film for pressure ulcer prevention
- 2018 - Present** - Investigation On the Effectiveness of Various 'Green' Batik Wax Blends Extruded via Fused Deposition Modeling (FDM).
- 2017 - Present** - Study On The Effect Of Cloisite 30B On The Antimicrobial Activities And Tissue Regeneration Of Starch Based Wound Healing Materials
- 2017 - Present** - Tribological Properties of Hybrid Composites based on Woven Carbon Fiber/Fine Kenaf Fabric Reinforced Epoxy Matrix for Automative Applications
- 2016 - Present** - Incorporating Qur'anic Terminology into Physics Textbook: Developing Ulu-Albab Thinking Mode in the Learning of Science
- 2016 - Present** - Cradle-to-Cradle Food Packaging Prototype from Durian Skin Fibre Biocomposite
- 2016 - Present** - Novel Tactile Sensory Surface Mat with Electrical Stimulation (SMES)for the Prevention of Pressure Ulcers due to Immobility
- 2014 - Present** - Fundamental Mechanism and Activation of Nanoadd Zirconia Toughened Alumina (ZTA) Cutting Insert via the Addition of Carbon Nanotube (CNT) for Machining Super Alloy Inconel 718
- 2009 - Present** - Advanced Materials and Surface Engineering (AMSERU)

### Completed

- 2017 - 2020** - Study On The Effect Of Cloisite 30B On The Antimicrobial Activities And Tissue Regeneration Of Starch Based Wound Healing Materials

- 2016 - 2020** The Study of Tropical Fruit Seeds as New Sources of Starch Based Biopolymers for Green Composites Applications
- 2016 - 2019** Novel Tactile Sensory Surface Mat with Electrical Stimulation (SMES) for the Prevention of Pressure Ulcers due to Immobility
- 2016 - 2019** Cradle-to-Cradle Food Packaging Prototype from Durian Skin Fibre Biocomposite
- 2016 - 2018** Incorporating Qur'anic Terminology into Physics Textbook: Developing Ulu-Albab Thinking Mode in the Learning of Science
- 2014 - 2018** Fundamental Mechanism and Activation of Nanoadd Zirconia Toughened Alumina (ZTA) Cutting Insert via the Addition of Carbon Nanotube (CNT) for Machining Super Alloy Inconel 718
- 2013 - 2016** Characterisation and Dissolution Study of Novel Biodegradable Phosphate Based Glass for Biomedical Application
- 2013 - 2016** Development of High Wear Resistant Nano Add ZTA Ceramic Cutting Insert for High Speed Machining Application
- 2012 - 2015** Prototype Development of Biodegradable Sago Based Sanitary Products
- 2012 - 2015** The Study of Biodegradable Metroxylon Rottb.(Sago)/Montmorillonite Nanoclay Superabsorbent Polymer (SAP)
- 2012 - 2014** Fabrication and Characterization of TiO<sub>2</sub> Thin Films Electrode for Energy Generation
- 2010 - 2013** Testing and evaluation of cassava starch as ceramic binder for investment casting
- 2010 - 2013** The study of PVC/alumina trihydrate nanocomposites for fire retardant-structural materials
- 2010 - 2012** The development of the thermoplastic starch for biodegradable fabrics
- 2009 - 2017** Value Engineering - Link Up with Universities Program: Parts Distribution and Handover
- 2009 - 2011** The Effect of Electron Beam Radiation on Mechanical properties of HDPE/EPDM- Organo Montmorillonite Nanocomposites
- 2009 - 2012** The Study of Superabsorbent Biodegradable Hydrogels Developed from Natural Polymer for Sanitary Products
- 2008 - 2011** Development of porous Tricalcium Phosphate (TCP) by Using Egg Yolk as pore Creating Agent
- 2007 - 2011** Development of In-House Ceramic Cutting Tools
- 2006 - 2009** Development of Environmental Friendly Super Bioadhesive For Structural Applications Using Egg Albumin As The Matrix Material
- 2006 - 2010** Formation of Surface Layer Coatings through Powder Preplacement and TIG Torch Melting Processes

Article

- 2014 [Influence of halloysite nanotubes hybridized with kenaf core fibers on the physical and mechanical properties of low density polyethylene/thermoplastic sago starch blends.](#) Polymer-Plastics Technology and Engineering , 53 pp.107-113
- 2013 [The effects of initiator content on sago \(metroxylon rottb.\) starch-G-PAN hydrogel .](#) Advanced Materials Research , 683 pp.218-221
- 2013 [The effect of kenaf core fibre loading on properties of low density polyethylene/thermoplastic sago starch/kenaf core fiber composites.](#) Journal of Physical Science , 24 (2) pp.97-115
- 2013 [Low Density Polyethylene \(LDPE\)/ Thermoplastic Sago Starch \(TPSS\) blend Filled Kenaf Core Fiber \(KCF\).](#) Advanced Materials Research , 626 pp.1048-1053
- 2012 [Integrating and infusing of Islamic values in the existing engineering course subject: a case study.](#) Advances in Natural and Applied Sciences , 6 (5) pp.625-632
- 2012 [Properties of montmorillonite-reinforced thermoplastic sago starch composites .](#) Advanced Materials Research , 445 pp.469-474
- 2012 [Improvement of Mechanical Properties of Injection-Molded Polylactic Acid-Kenaf Fiber Biocomposite .](#) Journal of Thermoplastic Composite Materials , 25 (2) pp.153-164
- 2012 [Effect of fiber loading on properties of thermoplastic sago starch/kenaf core fiber biocomposites.](#) BioResources , 7 (3) pp.4294-4306
- 2012 [Morphological study of Superabsorbent polymer hydrogels from sago starch.](#) Advanced Materials Research , 576 pp.338-341
- 2012 [The effect of water and citric acid on sago starch bio-plastics.](#) International Food Research Journal , 19 (2) pp.715-719
- 2012 [Rheological behavior and stability of cassava starch for ceramic mould binder application.](#) Advanced Materials Research , 576 pp.162-165
- 2012 [The study of glycerol plasticized thermoplastic sago starch.](#) Advanced Materials Research , 576 pp.289-292
- 2012 [Properties of sago starch-nanoclay biocomposites film.](#) Advanced Materials Research , 576 pp.480-483
- 2011 [Effect of fiber length variations on mechanical and physical properties of coir fiber reinforced cement-albument composites \(CFRCC\).](#) IIUM Engineering Journal , 12 (1) pp.63-75
- 2011 [Mechanical properties of injection moulded polylactic acid-kenaf fibre biocomposites \(DUMMY\).](#) World Journal of Engineering
- 2011 [Cotton reinforced biopolymer matrix composite: effect of curing and aging conditions on its mechanical properties.](#) Key Engineering Materials , 471-72 pp.403-408

- 2011 [The effect of fiber content on cotton reinforced albumen composites](#). IJUM Engineering Journal , 12 (2)
- 2011 [Islamisation of engineering education in International Islamic University Malaysia \(IIUM\): problems and prospect](#). Revelation and Science , 1 (3) pp.131-137
- 2011 [Improvement in mechanical properties of reinforced thermoplastic elastomer composite with kenaf bast fibre](#). Composites: Part B: Engineering , 42 pp.462-465
- 2011 [Properties of compression moulding starch-nanoclay biocomposites](#). World Journal of Engineering , 8 (Supp.1) pp.1377-1378
- 2011 [Micromechanical property investigations of poly\(lactic acid\)-kenaf fiber biocomposites](#). Journal of Natural Fibers , 8 (1) pp.14-26
- 2011 [Egg Yolk as pore creating agent to produce porous tri-calcium phosphate for bone implant application](#). Advanced Materials Research , 265 pp.760-764
- 2011 [The study of biodegradable thermoplastics sago starch](#). Key Engineering Materials , 471 pp.397-402
- 2011 [Cotton reinforced biopolymer matrix composite: effect of ultraviolet \(UV\) on its mechanical properties](#). Key Engineering Materials , 472-72 pp.928-932
- 2011 [Interfacial shear strength of Poly\(lactic acid\)-Kenaf fibre biocomposites](#). Key Engineering Materials , 471 pp.781-785
- 2011 [Porous alumina through protein foaming-consolidation method: effect of dispersant concentration on the physical properties](#). Asia-Pacific Journal of Chemical Engineering , 6 pp.863-869
- 2011 [Thermal properties of injection moulded poly\(lactic acid\) 13 kenaf fibre biocomposite](#). Malaysian Polymer Journal , 6 (1) pp.51-57
- 2010 [Application of low cost polyurethane \(PU\) foam for fabricating porous tri-calcium phosphate \(TCP\)](#). Journal of Biomimetics, Biomaterials and Tissue Engineering , 8 pp.1-7
- 2008 [Fracture behavior of natural fiber reinforced biopolymer matrix composite](#). Advanced Materials Research , 47 pp.1189-1192
- 2007 [Performance of hybrid filament wound composites tubes subjected to quasi static indentation](#). Materials and Design , 28 pp.71-77
- 2007 [Performance of hybrid filament wound composite tubes subjected to quasi static indentation](#). Materials & Design , 28 (1) pp.71-77
- Conference or Workshop Item**
- 2014 [Noble electroless Ni-P deposited hexagonal boron nitride for effective solid lubricant application](#). In: **Malaysia Technology Expo 2014**
- 2014 [Engineered hexagonal boron nitride utilizing environmental friendly co-deposition technique](#). In: **International Research, Invention and Innovation Exhibition 2014 (IRIIE2014)**

- 2013 [Tapping into students' passion, curiosity, engagement and dreams: Engineering Educators' Task](#) . In: **International Conference On Engineering Professional Ethics And Education (ICEPEE,13) 2013**
- 2013 [Creativity and the future of engineering education: making the strange familiar](#). In: **International Conference on Engineering Education 2013**
- 2013 [The effects of initiator content on sago \(metroxylon rottb.\) starch-G-PAN hydrogel](#). In: **2nd International Conference on Advanced Materials and Engineering Materials, ICAMEM 2012**
- 2013 [Materials in the holly Qur'an: the holy Qur'an has informed us earlier](#). In: **Third International Conference on Engineering Professional Ethics & Education [ICEPEE'13]**
- 2012 [Superabsorbent Hydrogel from Sago Starch: The Effects of Crosslinking Agent on Thermal Stability and FTIR Analysis](#). In: **International Conference on Metallurgy Technology and Materials, ICMTM 2012**
- 2011 [Properties of compression moulding starch - nanoclay biocomposites](#) . In: **The 19th Annual International Conference on Composites/Nano Engineering (ICCE 19)**
- 2011 [Comparison of theoretical and experimental values of tensile properties of injection moulded polylactic acid - kenaf fibre biocomposite](#). In: **14th International Conference on Advances in Material and Processing Technologies (AMPT 2011)**
- 2011 [Properties of montmorillonite-reinforced thermoplastic sago starch composites](#) . In: **14th International Conference on Advances in Material and Processing Technologies (AMPT 2011)**
- 2011 [Integrating Tawhidi values into science and engineering education: a case study](#). In: **International Conference on Islamization in Modern Science and Scientification of Islamic Studies: Prospects and Bridges**
- 2011 [Integrating and infusing of Islamic values in the existing engineering course subject: A case study](#) . In: **The 2nd International Conference on Engineering Professional Ethics and Education (ICEPEE '11)**
- 2011 [The effect of water and citric acid on sago starch bio-plastics](#). In: **2nd International Conference on Biotechnology Engineering (ICBioE 2011)**
- 2011 [The effect of nanoclay on the tensile properties of PLA-kenaf fibre hybrid bionanocomposite](#). In: **International Conference on Advanced Manufacturing of Composites (ICMAC)**
- 2011 [Fabrication of porous ceramic scaffolds via polymeric sponge method using sol-gel derived strontium doped hydroxyapatite powder](#). In: **5th Kuala Lumpur International Conference on Biomedical Engineering, BIOMED 2011**
- 2011 [The effect of plasticizers and citric acid on sago starch bio-plastics \(DUMMY\)](#). In: **2nd International Conference on Biotechnology Engineering (ICBioE 2011)**
- 2011 [Study of new eco-core metal matrix composite sandwich structure](#). In: **14th International Conference on Advances in Material and Processing Technologies (AMPT 2011)**

- 2011 [Injection moulded lightweight kenaf fibre thermoplastic elastomer composite for automotive components.](#) In: **IUM Research, Invention and Innovation Exhibition (IRIIE) 2011**
- 2011 [Eco-friendly PLA-kenaf fibre biocomposite for food packaging.](#) In: **IUM Research, Invention and Innovation Exhibition (IRIIE) 2011**
- 2011 [Eco-friendly PLA-kenaf fibre biocomposite for food packaging .](#) In: **Malaysia Technology Expo (MTE 2011)**
- 2010 [An eco-plastic made of PLA-Kenaf fibre biocomposite for cleaner environment.](#) In: **IUM Research, Innovation & Invention Exhibition (IRIIE 2010)**
- 2010 [Biodegradable PLA-Kenaf fibre biocomposite for cleaner environment.](#) In: **Malaysian Science and Technology Congress (MSTC 2010)**
- 2010 [Hazardless nanocomposite for gas barrier potential.](#) In: **IUM Research, Innovation & Invention Exhibition (IRIIE 2010)**
- 2010 [Lightweight biodegradable cotton/albumen board \(CAB\) for sustainable environment.](#) In: **IUM Research, Innovation & Invention Exhibition (IRIIE 2010)**
- 2010 [Single kenaf fibre properties via in situ monitoring using acoustic emission.](#) In: **Symposium Kebangsaan Aplikasi Sains Matematik 2010 (SKSM)**
- 2010 [Kenaf fibre reinforced poly\(lactic acid\) biocomposites.](#) In: **8th Global WPC and Natural Fibre Composites Congress and Exhibition**
- 2010 [Renewable food packaging from PLA-kenaf fibre biocomposite.](#) In: **Islamic Innovation Expo 2010 (i-Inova' 2010)**
- 2009 [Coir fiber reinforced cement-albumen based composite: effect of fiber length on the strength \(DUMMY\).](#) In: **The 4th International Conference on Recent Advance in Materials, Minerals and Environment**
- 2009 [Impact properties and fracture behavior of biopolymer cotton-clay nanocomposites \(DUMMY\).](#) In: **The 4th International Conference on Recent Advance in Materials, Minerals and Environment**
- 2009 [Effect of fiber loading and curing time on the compressive strength \(DUMMY\).](#) In: **2nd Annual International Conference on Green Technology and Engineering**
- 2009 [Effects of nanoclays on the structure and properties of cotton/albumen composites .](#) In: **2nd Annual International Conference on Green Technology and Engineering**
- [EVALUATION OF PHYSICAL AND MECHANICAL PROPERTIES OF THERMOPLASTIC STARCH KENAF BAST FIBER BIOCOMPOSITE .](#) In: **3rd International Conference On Biotechnology Engineering (ICBioE'13) - 2013**
- [EVALUATION OF PHYSICAL AND MECHANICAL PROPERTIES OF THERMOPLASTIC STARCH KENAF BAST FIBER BIOCOMPOSITE .](#) In: **12th International Conference On Frontiers Of Polymers And Advanced Materials (12th ICFPAM)**

[CHARACTERIZATIONS OF THERMOPLASTIC STARCH AND STARCH REINFORCED MONTMORILLONITE CLAY NANOCOMPOSITE](#) . In: **3rd International Conference On Biotechnology Engineering (Icbioe'13**

[CREATIVITY AND THE FUTURE OF ENGINEERING EDUCATION: MAKING THE STRANGE FAMILIAR](#) . In: **3rd International Conference On Engineering Education 2013 (ICEE 2013)**

#### Book

2011 [SAGO \(metroxylylon rottb\) and its applications](#). IUM Press . ISBN 9789674181635

#### Book Section

2012 [Surface properties and thermal behavior of Malaysian coir fiber](#). In: **Materials in Engineering in Health Sciences** Universiti Sains Malaysia . ISBN 978-983-861-533-4 , pp.1-7

2011 [Thermal and morphological study of Biopolymer Cotton-Albumen Clay \(BCAC\) composites](#). In: **Advances in composite materials** IUM Press . ISBN 9789674182311 , pp.62-67

2011 [Effect of compaction time on the properties of coir fiber reinforced cement-albumen composite](#). In: **Advances in composite materials** IUM Press . ISBN 9789674182311 , pp.68-73

2011 [Oil Palm Empty Fruit Bunch \(OPEFB\) for lightweight composites concrete](#) . In: **Advances in composite materials** IUM Press . ISBN 9789674182311 , pp.74-79

2011 [Investigation on the effect of water immersion on cotton albumen composite](#). In: **Advances in composite materials** IUM Press . ISBN 9789674182311 , pp.178-181

2011 [Sago, its properties and applications: a review](#). In: **SAGO (Metroxylylon rottb) and its applications** IUM Press . ISBN 9789674181635 , pp.1-15

2011 [SEM analysis of coir fiber and coir fiber-albumen-concrete before and after surface treatments](#). In: **Manufacturing management from basic machining to quality product** IUM Press . ISBN 9789674181659 , pp.220-229

2011 [Sago starch: nanoclay biocomposites film](#). In: **SAGO (Metroxylylon rottb) and its applications** IUM Press . ISBN 9789674181635 , pp.87-99

2011 [Preparation and characterization of glycerol plasticized sago starch-Kenaf core fibers biocomposites](#) . In: **SAGO (Metroxylylon rottb) and its applications** IUM Press . ISBN 9789674181635 , pp.101-114

2011 [Comparative study between standard and commercial sago starch](#). In: **SAGO (Metroxylylon rottb) and its applications** IUM Press . ISBN 9789674181635 , pp.17-26

2011 [The effect of fibre content on thermal property of coir fibre reinforced cement-albumen composite](#). In: **Advances in materials engineering** IUM Press . ISBN 9789674181673 , pp.172-177

2011 [Investigation on the effect of ultra violet on cotton albumen composite](#). In: **Advances in materials engineering - Volume 2** IUM Press . ISBN 9789674181680 , pp.96-99



- 2011** [Workability of coir fibre-reinforced cement-albumen composite.](#) In: **Advances in materials engineering** IIUM Press . ISBN 9789674181673 , pp.195-200
- 2011** [The effects of chemical and mechanical treatments on coir fiber to mechanical properties of coir-albumen-concrete.](#) In: **Advances in composite materials** IIUM Press . ISBN 9789674182311 , pp.108-113
- 2011** [An investigation of hybrid composites tubes subjected to quasi-static loading.](#) In: **Advances in composite materials** IIUM Press . ISBN 9789674182311 , pp.138-143
- 2011** [Foam impregnation method for artificial bone graft application : study on the effect of drying time.](#) In: **Advances in Materials Engineering - Volume 2** IIUM Press . ISBN 9789674181680 , pp.78-83
- 2011** [Foam impregnation method for artificial bone graft application: study on the effect of sintering temperature.](#) In: **Advances in Materials Engineering - Volume 2** IIUM Press . ISBN 9789674181680 , pp.84-88
- 2011** [Mechanical behaviour of Biopolymer Cotton Albumen Clay \(BCAC\) composites.](#) In: **Advances in composite materials** IIUM Press . ISBN 9789674182311 , pp.144-149
- 2011** [Overview on Malaysia natural fibres and its applications .](#) In: **Malaysia natural fibers for diversified bio-based application** IIUM Press . ISBN 9789674180218 , pp.1-19
- 2011** [Mechanical behaviour of Oil Palm Empty Fruit Bunch \(OPEFB\) albumen-composites concrete.](#) In: **Advances in composite materials** IIUM Press . ISBN 9789674182311 , pp.49-54
- 2011** [Malaysian coir fibre for acoustical absorption cement composite panel .](#) In: **Malaysia natural fibers for diversified bio-based application** IIUM Press . ISBN 9789674180218 , pp.39-48
- 2011** [The influence of biopolymer and natural fiber on the physical and mechanical properties of cement composite.](#) In: **Advances in composite materials** IIUM Press . ISBN 9789674182311 , pp.55-61