

CURRICULUM VITAE



A. BUTIR-BUTIR PERIBADI *(Personal Details)*

| | | | |
|--|-------------------------------------|--|--|
| Nama Penuh <i>(Full Name)</i> | HIDAYAH ARIFFIN | | Gelaran <i>(Title)</i> : PROF. TS. DR |
| No. MyKad / No. Pasport <i>(Mykad No. / Passport No.)</i> | Warganegara <i>(Citizenship)</i> | Bangsa <i>(Race)</i> | Jantina <i>(Gender)</i> |
| | MALAYSIA | MALAY | FEMALE |
| Jawatan <i>(Designation)</i> | PROFESSOR | Tarikh Lahir <i>(Date of Birth)</i> | 27 FEBRUARY 1981 |

| Alamat Semasa <i>(Current Address)</i> | Jabatan/Fakulti <i>(Department/Faculty)</i> | E-mel dan URL <i>(E-mail Address and URL)</i> |
|---|---|--|
| DEPARTMENT OF BIOPROCESS TECHNOLOGY, FACULTY OF BIOTECHNOLOGY AND BIOMOLECULAR SCIENCES, UNIVERSITI PUTRA MALAYSIA, 43400 UPM SERDANG, SELANGOR Tel: 012-6790378 | DEPARTMENT OF BIOPROCESS TECHNOLOGY, FACULTY OF BIOTECHNOLOGY AND BIOMOLECULAR SCIENCES Tel: 03-97691049 Fax:03-97697590 | E-mail: hidayah@upm.edu.my URL: http://biotech.upm.edu.my H/P:012-6790378 |

B. KELAYAKAN AKADEMIK *(Academic Qualification)*

| Nama Sijil / Kelayakan <i>(Certificate / Qualification obtained)</i> | Nama Sekolah Institusi <i>(Name of School / Institution)</i> | Tahun <i>(Year obtained)</i> | Bidang pengkhususan <i>(Area of Specialization)</i> |
|---|---|---------------------------------|--|
| PhD | Kyushu Institute of Technology, Japan | 2009 | Environmental Engineering |
| MSc | Universiti Putra Malaysia | 2006 | Bioprocess Engineering |
| Bachelor of Engineering | Universiti Putra Malaysia | 2004 | Process and Food Engineering |

C. KEMAHIRAN BAHASA *(Language Proficiency)*

| Bahasa / <i>Language</i> | Lemah <i>Poor (1)</i> | Sederhana <i>Moderate (2)</i> | Baik <i>Good (3)</i> | Amat Baik <i>Very good (4)</i> | Cemerlang <i>Excellent (5)</i> |
|--------------------------|--------------------------|----------------------------------|-------------------------|-----------------------------------|-----------------------------------|
| English | | | | | / |

| | | | | | |
|---------------|---|--|--|--|---|
| Bahasa Melayu | | | | | / |
| Chinese | | | | | |
| Japanese | / | | | | |
| Arabic | / | | | | |

| D. PENGALAMAN SAINTIFIK DAN PENGKHUSUSAN <i>(Scientific experience and Specialisation)</i> | | | | |
|--|---|-------------------|-----------------|--|
| <i>Organization</i> | <i>Position</i> | <i>Start Date</i> | <i>End Date</i> | <i>Expertise</i> |
| Kyushu Institute of Technology | External Examiner | 2020 | to date | Bioprocess Engineering, Biopolymer, Environmental Technology |
| Akademi Sains Malaysia | Editorial Board Member, ASM Science Journal | 2019 | to date | Bioprocess Engineering, Biopolymer, Environmental Technology |
| Ministry of Higher Education | Panel, Grant Application | 2019 | to date | Biotechnology |
| Invest Selangor Berhad | Selangor Biotech Working Committee | 2024 | to date | Biotechnology |
| Invest Selangor Berhad | Consultancy | 2021 | 2022 | Biotechnology |
| Technical Association for Pulp and Paper Industries (TAPPI) | Secretary, Nanotechnology Division Research Committee | 2022 | to date | Bioprocess Engineering, Biopolymer |
| Mitsubishi Heavy Industries (Asia Pacific and Japan) | Consultant | 2017 | to date | Bioprocess Engineering, Biopolymer |
| Nagase Corporation Pte Ltd | Consultant | 2021 | 2023 | Bioprocess Engineering, Biopolymer |
| SCG Packaging Pte Ltd | Consultant | 2022 | 2024 | Bioprocess Engineering, Biopolymer |
| Nextgreen Pulp and Paper Sdn Bhd | Consultant & Research Collaborator | 2019 | to date | Bioprocess Engineering, Biopolymer |
| Local universities (UM, USM, UMP, UIA, etc) | External Examiner | 2013 | to date | Bioprocess Engineering, Biopolymer, |

| | | | | |
|--|--|--|--|--------------------------|
| | | | | Environmental Technology |
|--|--|--|--|--------------------------|

| E. PEKERJAAN (Employment) | | | | |
|----------------------------------|-----------------------|--|------------------------------|---------------------------|
| Majikan / Employer | Jawatan / Designation | Jabatan / Department | Tarikh lantikan / Start Date | Tarikh tamat / Date Ended |
| Universiti Putra Malaysia | Professor | Department of Bioprocess Technology | 1 June 2020 | To date |
| Universiti Putra Malaysia | Deputy Dean | Faculty of Biotechnology and Biomolecular Sciences | 2021 | To date |
| Universiti Putra Malaysia | Deputy Director | INTROP | 2 April 2018 | |
| Universiti Putra Malaysia | Assoc. Professor | Department of Bioprocess Technology | 1 June 2016 | 31 May 2020 |
| Universiti Putra Malaysia | Head of Laboratory | Laboratory of Biopolymer and Derivatives, INTROP | 1 July 2015 | 1 April 2018 |
| Universiti Putra Malaysia | Senior Lecturer | Department of Bioprocess Technology | 2 October 2009 | 31 May 2016 |
| Universiti Putra Malaysia | Tutor | Department of Bioprocess Technology | 15 June 2006 | 1 October 2009 |

| F. ANUGERAH DAN HADIAH (Honours and Awards) | | | | |
|--|--|---|---------------|-----------|
| Name of awards | Title | Award Authority | Award Type | Year |
| Academic Awards | 1) JSPS travel grant award for Integrated Study Program on Alternative Energy Production and Management in Japan | Japan Society for the Promotion of Science (JSPS) | International | 2010 |
| | 2) MOHE travel grant award to Australia | Ministry of Higher Education, Malaysia | National | 2008 |
| | 3) Meisenkai travel grant award to USA | Kyushu Institute of Technology | International | 2008 |
| | 4) Scholarship (SLAI) to Japan | Ministry of Higher Education, Malaysia | National | 2006-2009 |
| | 5) National Science Fellowship | Ministry of Science, Technology and Innovation | National | 2004-2006 |

| | | | | |
|-----------------------------------|---|---|---------------|------------|
| <i>Non-Academic Awards</i> | 1) Anugerah Perkhidmatan Cemerlang 2014, 2017 | Universiti Putra Malaysia | University | 2015, 2018 |
| | | | National | 2017 |
| | 2) Gold Medal, Bioeconomy Innovation Award 2017 (Most Commercial Ready Product) | Malaysian Bioeconomy Development Corporation | National | 2017 |
| | | Malaysian Bioeconomy Development Corporation | International | 2015 |
| | 3) Silver Medal, Bioeconomy Innovation Award 2017 (Most Innovative Product) | Malaysian Association of Research Scientists (MARS) | International | 2014 |
| | | Malaysian Association of Research Scientists (MARS) | University | 2014 |
| | 4) Bronze Medal, MTE2015 | Malaysian Association of Research Scientists (MARS) | International | 2011 |
| | | Malaysian Association of Research Scientists (MARS) | International | 2009 |
| 5) Silver Medal, MTE2014 | Universiti Putra Malaysia | | | |
| 6) Silver Medals, PRPI2014 | Universiti Putra Malaysia | | | |
| 7) 2 Gold Medals, ITEX 2011 | Malaysian Invention and Design Society (MINDS) | | | |
| 8) Best presenter, APBioChEC 2009 | The Society of Chemical Engineers, Japan -Division of Biochemical Engineering | | | |
| <i>Awards of Merit</i> | Top Research Scientist Malaysia 2022 | Akademi Sains Malaysia | National | 2022 |
| | Fellow, Academy of Professors Malaysia | Academy of Professors Malaysia | National | 2025 |

G. SENARAI PENERBITAN (Sila masukan nama pengarang, tajuk, nama jurnal, jilid, muka surat dan tahun diterbitkan) (List of publications – author (s), title, journal, volume, page and year published)

| | |
|----------------|---|
| <i>Journal</i> | <p>Scopus h-index: 39</p> <p>1. Lee Li Xin, Nur Fatihah Eliya Mohamed Fauzi, Ahmad Muhaimin Roslan, Hidayah Ariffin, Mohd Zulkhairi Mohd Yusoff, Norhayati Ramli, Moor-Azira Abdul-Mutalib. 2025. Evaluating grease trap management practices: A case study from Seri Kembangan, Malaysia. Journal of Environmental Management. 373, 123936.</p> |
|----------------|---|

| | |
|--|---|
| | <p>2. Liana Noor Megashah, Hidayah Ariffin*, Mohd Rafein Zakaria, Yoshito Andou, Mohd Ali Hassan, Tengku Arisyah Tengku Yasim-Anuar. 2024. Energy-efficient and improved productivity of cellulose nanofibril processing in wet disc mill by regulating the cellulose degree of polymerization. <i>Industrial Crops and Products</i>. 222, 119861.</p> <p>3. Aatikah Meraj, Mohamad Jawaid, Mohamed Mahmoud Nasef, Surendra Pratap Singh, Hidayah Ariffin, Basim Abu-Jdayil. 2025. Exploring the potential of lignin extracted with natural deep eutectic solvents for adsorption of carbon dioxide. <i>Biomass Conversion and Biorefinery</i>, 15(5), 7323–7332</p> <p>4. Gan Yee-Lin, Tan Chin Ping, Kqueen Cheah Yoke, Hidayah Ariffin, Helmi Wasoh, Lai Oi Ming. 2025. Nanoemulsion and Topical Cream for Delivery of Tocotrienol-rich fraction, Ascorbyl Tetraisopalmitate, and Carotenes: Formulation and in vitro Release. <i>Pertanika Journal of Tropical Agricultural Science</i>, 48(1).</p> <p>5. Nur Liyana Mohd Izan, Ezyana Kamal Bahrin, Mohd Zulkhairi Mohd Yusoff, Khanom Simarani, Nur Sharmila Sharip, Hidayah Ariffin. 2024. Sustainable utilisation of oil palm empty fruit bunch and <i>Perenniporia subtephropora</i> for eco-friendly mycelium-based biofoam. <i>Biocatalysis and Agricultural Biotechnology</i>. 62, 103436.</p> <p>6. Farah Nabila Mhd Idris, Hidayah Ariffin*, Paridah Md. Tahir, Rushdan Ibrahim. 2024. Feasibility of lignin-containing cellulose nanofibrils derived from oil palm empty fruit bunch in enhancing the properties of non-wood handsheets. <i>Industrial Crops and Products</i>. 212, 118307.</p> <p>7. Nur Aina Natasha Mohd Asmadi, Zee Kar Mun, Shobanah Menon Baskaran, Hidayah Ariffin, Helmi Wasoh, Toshinari Maeda, Mohd Ali Hassan, Mohd Rafein Zakaria. 2024. Rhamnolipids production by <i>Pseudomonas aeruginosa</i> RW9 using palm oil mill effluent sludge oil as a carbon source. <i>Biocatalysis and Agricultural Biotechnology</i>. 57, 103069</p> <p>8. Bijendra Shrestha, Jetsada Posom, Pornchaloempong Pimpen, Panmanas Sirisomboon, Bim Prasad Shrestha, Hidayah Ariffin. 2024. Near-Infrared Spectroscopy Modeling of Combustion Characteristics in Chip and Ground Biomass from Fast-Growing Trees and Agricultural Residue. <i>Energies</i>. 17(6), 1338.</p> <p>9. Mohd Ali Hassan, Mohammed Abdilllah Ahmad Farid, Mohd Rafein Zakaria, Hidayah Ariffin, Yoshito Andou, Yoshihito Shirai. 2024. Palm oil expansion in Malaysia and its countermeasures through policy window and biorefinery approach. <i>Environmental Science and Policy</i>. 153, 103671.</p> <p>10. Aatikah Meraj, Mohamad Jawaid, Surendra Pratap Singh, Mohamed Mahmoud Nasef, Hidayah Ariffin, M.K. Mohamad Haafiz. 2023. Effect of natural deep eutectic solvents on properties of micro crystalline cellulose isolated from kenaf fibre. <i>Industrial Crops and Products</i>. 203, 117129.</p> <p>11. Fatimah Athiyah Sabaruddin, Liana Noor Megashah, Siti Shazra Shazleen, Hidayah Ariffin*. 2023. Emerging trends in the appliance of ultrasonic technology for</p> |
|--|---|

| | |
|--|--|
| | <p>valorization of agricultural residue into versatile products. <i>Ultrasonics Sonochemistry</i>. 99, 106572</p> <p>12. Lim, Kah Yen, Tengku Arisyah Tengku Yasim-Anuar, Farhana Aziz Ujang, Hazwani Husin, Hidayah Ariffin, Paridah Md Tahir, Li Xinping, Mohd Termizi Yusof. 2023. Reactivity Enhancement of Lignin Extracted from Preconditioning Refiner Chemical-Recycle Bleached Mechanized Pulp (PRC-RBMP) Black Liquor by Phenolation. <i>Pertanika Journal of Science and Technology</i>. 31(5), 2577.</p> <p>13. Norsuhaili Kamairudin, Luqman Chuah Abdullah, Hoong Seng Soi, Dayang Radiah Awang Biak, Hidayah Ariffin. 2023. Preparation and Effect of Methyl-Oleate-Based Polyol on the Properties of Rigid Polyurethane Foams as Potential Thermal Insulation Material. <i>Polymers</i>. 15(4). 3028.</p> <p>14. Siti Nur Nadhirah Said Azmi, Zainatul 'Asyiqin Samsu, Ahmad Syafiq Fauzan Mohd Asnawi, Hidayah Ariffin, Sharifah Sopliah Syed Abdullah. 2023. The production and characterization of bacterial cellulose pellicles obtained from oil palm frond juice and their conversion to nanofibrillated cellulose. <i>Carbohydrate Polymer Technologies and Applications</i>. 5, 100327</p> <p>15. Lim, Kah Yen, Tengku Arisyah Tengku Yasim-Anuar, Nur Sharmila Sharip, Farhana Aziz Ujang, Hazwani Husin, Hidayah Ariffin, Paridah Md Tahir, Li Xinping, Lee Seng Hua, Mohd Termizi Yusof. 2023. Green Phenolic Resins from Oil Palm Empty Fruit Bunch (EFB) Phenolated Lignin and Bio-Oil as Phenol Substitutes for Bonding Plywood. <i>Polymers</i>. 15(5), 1258.</p> <p>16. Siti Shazra Shazleen, Fatimah Athiyah Sabaruddin, Yoshito Ando, Hidayah Ariffin*. 2023. Optimization of Cellulose Nanofiber Loading and Processing Conditions during Melt Extrusion of Poly(3-hydroxybutyrate-co-3-hydroxyhexanoate) Bionanocomposites. <i>Polymers</i>. 15 (3). 671.</p> <p>17. Lawrence Yee Foong Ng, Hidayah Ariffin*, Tengku Arisyah Tengku Yasim-Anuar, Mohammed Abdilllah Ahmad Farid and Mohd Ali Hassan. 2022. High-Energy Ball Milling for High Productivity of Nanobiochar from Oil Palm Biomass. <i>Nanomaterials</i>, 12, 3251.</p> <p>18. Tengku Arisyah Tengku Yasim-Anuar, Lawrence Ng Yee-Foong, Abubakar Abdullahi Lawal, Mohammed Abdilllah Ahmad Farid, Mohd Zulkhairi Mohd Yusuf, Mohd Ali Hassan and Hidayah Ariffin*. 2022. Emerging application of biochar as a renewable and superior filler in polymer composites. <i>RSC Advances</i>, 12. 13938.</p> <p>19. Safarul Mustapha, Jacqueline Lease, Kubra Eksiler, Siew Teng Sim, Hidayah Ariffin and Yoshito Andou. 2022. Facile Preparation of Cellulose Fiber Reinforced Polypropylene Using Hybrid Filler Method. <i>Polymers</i>, 14, 1630.</p> <p>20. Shazleen, S.S., Foong Ng, L.Y., Ibrahim, N.A., Hassan, M.A., Ariffin, H*. 2021. Combined effects of cellulose nanofiber nucleation and maleated polylactic acid compatibilization on the crystallization kinetic and mechanical properties of polylactic acid nanocomposite. <i>Polymers</i>, 13 (19), art. no. 3226.</p> |
|--|--|

| | |
|--|---|
| | <p>21. Mohd Nor Faiz Norrahim, Hidayah Ariffin*, Tengku Arisyah Tengku Yasim-Anuar, Mohd Ali Hassan, Nor Azowa Ibrahim, Wan Md Zin Wan Yunus, Haruo Nishida. 2021. Performance Evaluation of Cellulose Nanofiber with Residual Hemicellulose as a Nanofiller in Polypropylene-Based Nanocomposite. <i>Polymers</i>. 13(7), 1064.</p> <p>22. Nur Sharmila Sharip, Hidayah Ariffin*, Tengku Arisyah Tengku Yasim Anuar, Yoshito Andou, Yuki Shirosaki, Mohamad Jawaid, Paridah Md Tahir, Nor Azowa Ibrahim. 2021. Melt-vs. Non-melt blending of complexly processable ultra-high molecular weight polyethylene/cellulose nanofiber bionanocomposite. <i>Polymers</i>.13(3), 404.</p> <p>23. Siti Shazra Shazleen, Tengku Arisyah Tengku Yasim Anuar, Nor Azowa Ibrahim, Mohd Ali Hassan, Hidayah Ariffin*. 2021. Functionality of Cellulose Nanofiber as Bio-Based Nucleating Agent and Nano-Reinforcement Material to Enhance Crystallization and Mechanical Properties of Polylactic Acid Nanocomposite. <i>Polymers</i> .13(3), 389.</p> <p>24. Arisah, F.M., Amir, A.F., Ramli, N., Ariffin, H., Maeda, T., Hassan, M.A., Yusoff, M.Z.M. 2021. Bacterial resistance against heavy metals in pseudomonas aeruginosa rw9 involving hexavalent chromium removal. <i>Sustainability</i>, 13 (17), art. no. 9797.</p> <p>25. Mohamed Abdillah Ahmad Farid, Mohd Ali Hassan*, Ahmad Muhaimin Roslan, Hidayah Ariffin, Mohd Nor Faiz Norrahim, Mohd Ridzuan Othman, Yoshihito Shirai. 2021. Improving the decolorization of glycerol by adsorption using activated carbon derived from oil palm biomass. <i>Environmental Science and Pollution Research</i>.</p> <p>26. Norsuhaili Kamairudin, Seng Soi Hoong, Luqman Chuah Abdullah*, Hidayah Ariffin, Dayang Radiah Awang Biak. 2021. Optimisation of Epoxide Ring-Opening Reaction for the Synthesis of Bio-Polyol from Palm Oil Derivative Using Response Surface Methodology. <i>Molecules</i>. 26(3), 648.</p> <p>27. Saffian, H.A., Yamaguchi, M., Ariffin, H*, Abdan, K., Kassim, N.K., Lee, S.H., Lee, C.H., Shafi, A.R., Alias, A.H. 2021. Thermal, physical and mechanical properties of poly(Butylene succinate)/kenaf core fibers composites reinforced with esterified lignin. <i>Polymers</i>, 13 (14), art. no. 2359</p> <p>28. Liana Noor Megashah, Hidayah Ariffin*, Mohd Rafein Zakaria, Mohd Ali Hassan, Yoshito Andou, Farah Nadia Mohammad Padzil. 2020. Modification of Cellulose Degree of Polymerization by Superheated Steam Treatment for Versatile Properties of Cellulose Nanofibril Film, <i>Cellulose</i>. 27 (13), 7419.</p> <p>29. Tengku Arisyah Tengku Yasim Anuar, Hidayah Ariffin*, Mohd Nor Faiz Norrahim, Mohd Ali Hassan, Yoshito Andou, Takayuki Tsukegi and Haruo Nishida. 2020. Well-Dispersed Cellulose Nanofiber in Low Density Polyethylene Nanocomposite by Liquid-Assisted Extrusion. <i>Polymers</i>. 12, 927.</p> <p>30. Nur Sharmila Sharip, Hidayah Ariffin*, Yoshito Andou, Yuki Shirosaki, Ezyana Kamal Bahrin, Mohamad Jawaid, Paridah Md Tahir, Nor Azowa Ibrahim. 2020. Process optimization of ultra-high molecular weight polyethylene/cellulose nanofiber</p> |
|--|---|

| | |
|--|---|
| | <p>bionanocomposites in triple screw kneading extruder by response surface methodology. <i>Molecules</i>, 25(19), 4498.</p> <p>31. Tengku Arisyah Tengku Yasim Anuar, Nur Sharmila Sharip, Liana Noor Megashah, Nor Azlin Muhamad Nor, <u>Hidayah Ariffin*</u>. 2020. Cellulose Nanofibers from Wastepaper and their Utilization as Reinforcement Materials in Poly((R)-3-Hydroxybutyrate-co-(R)-3-Hydroxyhexanoate Bionanocomposite. <i>Pertanika Journal of Science and Technology</i>, Vol. 28(S2) 2020.</p> <p>32. Muhammad Nazmir Mohd Warid, Tengku Arisyah Tengku Yasim-Anuar, <u>Hidayah Ariffin*</u>, Mohd Ali Hassan, Yoshihito Shirai and Yoshito Andou. 2020. Static Mechanical, Thermal Stability, and Interfacial Properties of Superheated Steam Treated Oil Palm Biomass Reinforced Polypropylene Biocomposite. <i>Pertanika Journal of Science and Technology</i>, Vol. 28(S2) 2020.</p> <p>33. Nur Sharmila Sharip, <u>Hidayah Ariffin*</u>, Tengku Arisyah Tengku Yasim-Anuar, Yoshito Andou, Yuki Shirotsaki, Mohammad Jawaid, Paridah Md Tahir, Nor Azowa Ibrahim. 2020. Melt- vs. non-Melt Blending of Complexly Processable Ultra-High Molecular Weight Polyethylene/Cellulose Nanofiber Bionanocomposite. <i>Polymers</i>. Accepted.</p> <p>34. Siti Shazra Shazleen, Tengku Arisyah Tengku Yasim-Anuar, Nor Azowa Ibrahim, Mohd Ali Hassan, <u>Hidayah Ariffin*</u>. 2020. Functionalization of Cellulose Nanofiber as Bio-based Nucleating Agent and Nano-reinforcement Material to Enhance Crystallization and Mechanical Properties of Polylactic Acid Nanocomposite. <i>Polymers</i>. Accepted.</p> <p>35. Harmaen Ahmad Saffian*, Mohd Aizam Talib, Lee Seng Hua, Paridah Md Tahir, Lee Ching Hao, <u>Hidayah Ariffin*</u>, Ainun Zuriyati Mohamed As'ari. 2020. Mechanical strength, thermal conductivity and electrical breakdown of kenaf core fiber/lignin/polypropylene biocomposite. <i>Polymers</i>, 12(8). 3671</p> <p>36. Rasdianah Dahali, Seng Hua Lee*, Zaidon Ashaari, Edi Suhaimi Bakar, <u>Hidayah Ariffin</u>, Pui San Khoo, Paiman Bawon and Qamariah Norhidayah Salleh. 2020. Durability of Superheated Steam-Treated Light Red Meranti (<i>Shorea</i> spp.) and Kedondong (<i>Canarium</i> spp.) Wood against White Rot Fungus and Subterranean Termite. <i>Sustainability</i>, 12(11), 4431.</p> <p>37. Hasbullah Hassan Basri, Rosnita A. Talib*, Rashidah Sukor, Siti Hajar Othman and <u>Hidayah Ariffin</u>. 2020. Effect of Synthesis Temperature on the Size of ZnO Nanoparticles Derived from Pineapple Peel Extract and Antibacterial Activity of ZnO–Starch Nanocomposite Films. <i>Nanomaterials</i>, 10(6), 1061.</p> <p>38. Nur Sharmila Sharip, <u>Hidayah Ariffin*</u>, Yoshito Andou, Ezyana Kamal Bahrin, Mohamad Jawaid, Paridah Md Tahir, Nor Azowa Ibrahim. 2020. Parameters Optimization in Compression Molding of Ultra-high Molecular Weight Polyethylene/Cellulose Nanofiber Bio-nanocomposites by using Response Surface Methodology. <i>Pertanika Journal of Science and Technology</i>, Vol. 28(S2) 2020.</p> |
|--|---|

39. Mohd Nor Faiz Norrahim, **Hidayah Ariffin***, Mohd Ali Hassan, Nor Azowa Ibrahim, Wan Md Zin Wan Yunus, Haruo Nishida. **2019**. Utilisation of superheated steam in oil palm biomass pretreatment process for reduced chemical use and enhanced cellulose nanofibre production. *International Journal of Nanotechnology*. 16, 668-679.
40. Tengku Arisyah Tengku Yasim Anuar, **Hidayah Ariffin***, Mohd Nor Faiz Norrahim, Mohd Ali Hassan, Takayuki Tsukegi and Haruo Nishida. **2019**. Sustainable one-pot process for the production of cellulose nanofiber and polyethylene / cellulose nanofiber composites. *Journal of Cleaner Production*. 207, 590-599.
41. Lau Kia Kian, Mohamad Jawaid*, **Hidayah Ariffin**, Zoheb Karim, Mohamed Thariq Hameed Sultan. **2019**. Morphological, physico-chemical, and thermal properties of cellulose nanowhiskers from roselle fibers. *Cellulose*. 26(11). 6599 – 6613.
42. Kubra Eksiler, Yoshito Andou*, **Hidayah Ariffin**, Yoshihito Shirai. **2019**. Surface modification for nano-lignocellulose fiber through vapor-phase-assisted surface polymerization. *Journal of Polymer Science, Part A: Polymer Chemistry*. 57(24), 2575-2580
43. Mohd Ali Hassan*, Mohammed Abdillah Ahmad Farid, Yoshihito Shirai, **Hidayah Ariffin**, Mohd Ridzuan Othman, Mohd Hafif Samsudin, Mohamad Yusuf Hasan. **2019**. Oil palm biomass biorefinery for sustainable production of renewable materials. *Biotechnology Journal*. 14(6). 1800394
44. Nur Aima Hafiza Shazali, Noorzaileen Eileena Zaidi, **Hidayah Ariffin**, Luqman Chuah Abdullah, Ferial Ghaemi, Jafri Malin Abdullah, Ichiro Takashima and Nik Mohd Afizan Nik Abd. Rahman **2019**. Characterization and Cellular Internalization of Spherical Cellulose Nanocrystals (CNC) into Normal and Cancerous Fibroblasts. *Materials*. 12(19), 3251
45. Ramengmawii Siakeng, Mohamad Jawaid*, **Hidayah Ariffin**, Mohd Sapuan Salit. **2019**. Effect of soil biodegradation on tensile and physical properties of coir/pineapple leaf fibre reinforced poly lactic acid hybrid biocomposites. *International Journal of Recent Technology and Engineering*. 8(2), 501-505
46. Ahmad Aiman Zulkifli, Mohd Zulkhairi Mohd Yusoff*, Latifah Abd Manaf, Mohd Rafein Zakaria, Ahmad Muhaimin Roslan, **Hidayah Ariffin**, Yoshihito Shirai and Mohd Ali Hassan. **2019**. Assessment of municipal solid waste generation in Universiti Putra Malaysia and its potential for green energy production. *Sustainability*. 11(14), 3909.
47. Ramengmawii Siakeng, Mohamad Jawaid*, **Hidayah Ariffin**, Mohd Sapuan Salit. **2019**. Mechanical, dynamic, and thermomechanical properties of coir/pineapple leaf fiber reinforced polylactic acid hybrid biocomposites. *Polymer Composites*. 40(5), 2000-2011
48. Diana Mohd-Nor, Norhayati Ramli, Siti Suhailah Sharuddin, Mohd Ali Hassan, Nurul Asyifah Mustapha, **Hidayah Ariffin**, Kenji Sakai, Yukihiro Tashiro, Yoshihito Shirai and Toshinari Maeda. **2019**. Dynamics of Microbial Populations Responsible for Biodegradation during the Full-Scale Treatment of Palm Oil Mill Effluent. *Microbes and Environments*, 34(2), 121-128.
49. Ramengmawii Siakeng, Mohamad Jawaid*, **Hidayah Ariffin**, Mohd Sapuan Salit, Mohammad Asim, Naheed Saba. **2019**. Natural fiber reinforced polylactic acid composites: A review. *Polymer Composites*. 40(2), 446-463

50. Ahmed Jaafar Hussein Challabi, Buong Woei Chieng*, Nor Azowa Ibrahim*, **Hidayah Ariffin** and Norhazlin Zainuddin. **2019**. Effect of superheated steam treatment on the mechanical properties and dimensional stability of PALF/PLA biocomposite. *Polymers*. 11(3), 482
51. Mohd Nor Faiz Norrrahim, **Hidayah Ariffin***, Tengku Arisyah Tengku Yasim-Anuar, Ferial Ghaemi, Mohd Ali Hassan, Nor Azowa Ibrahim, Janet Lim Hong Ngee, Wan Md Zin Wan Yunus. **2018**. Effect of super-heated steam treatment on electrospinning of cellulose. *Cellulose*. 25(7), 3853-3859.
52. Dhurga Devi Rajaratanam, **Hidayah Ariffin***, Mohd Ali Hassan, Nik Mohd Afizan Nik Abd Rahman and Haruo Nishida. **2018**. In vitro cytotoxicity of superheated steam hydrolyzed oligo(3-(R)-hydroxybutyrate-co-3-(R)-hydroxyhexanoate) and characteristics of its blend with poly(L-lactic acid) for biomaterial applications. *PLoS One*.doi:10.1371/journal.pone.0199742.
53. Liana Noor Megashah, **Hidayah Ariffin***, Mohd Rafein Zakaria, Yoshito Ando. **2018**. Characteristics of Cellulose from Oil Palm Mesocarp Fibres Extracted by Multi-step Pretreatment Methods. *IOP Conference Series: Material & Science Engineering*. 368, 012001. doi:10.1088/1757-899X/368/1/012001
54. Lau Kia Kian, Mohamad Jawaid*, **Hidayah Ariffin**, Zoheb Karim. **2018**. Isolation and Characterization of Nanocrystalline Cellulose from Roselle-derived Microcrystalline Cellulose. *International Journal of Biological Macromolecules*. 114. 54-63
55. Tengku Arisyah Tengku Yasim Anuar, **Hidayah Ariffin***, Mohd Ali Hassan. **2018**. Characterization of Cellulose Nanofiber from Oil Palm Mesocarp Fiber produced by Ultrasonication. *IOP Conference Series: Material & Science Engineering*. 368, 012033. doi:10.1088/1757-899X/368/1/012033
56. Liana Noor Megashah, **Hidayah Ariffin***, Mohd Rafein Zakaria, Yoshito Ando. Properties of Cellulose Extract From Different Types of Oil Palm Biomass. **2018**. *IOP Conference Series: Material & Science Engineering*. 368, 012049. doi:10.1088/1757-899X/368/1/012049
57. Mohd Nor Faiz Norrrahim, **Hidayah Ariffin***, Tengku Arisyah Tengku Yasim Anuar, Mohd Ali Hassan, Haruo Nishida, Takayuki Tsukegi. **2018**. One-pot nanofibrillation of cellulose and nanocomposite production in a twin-screw extruder. *IOP Conference Series: Material & Science Engineering*. 368, 012034. doi:10.1088/1757-899X/368/1/012034
58. Siakeng, R., Jawaid, M., **Ariffin, H.**, Sapuan, S.M. **2018**. Physical properties of coir and pineapple leaf fibre reinforced polylactic acid hybrid composites. *IOP Conference Series: Material & Science Engineering*.
59. Evelyn Yun Xi Loh, Mh Busra Fauzi, Min Hwei Ng, Pei Yuen Ng, Shiow Fern Ng, **Hidayah Ariffin**, and Mohd Cairul Iqbal Mohd Amin*. **2018**. Cellular and Molecular Interaction of Human Dermal Fibroblasts with Bacterial Nanocellulose Composite Hydrogel for Tissue Regeneration. *ACS Applied Materials and Interfaces*. 10(46), 39532-39543.

60. Ramengmawii Siakeng, Mohamad Jawaid*, **Hidayah Ariffin**, Mohd Sapuan Salit. **2018**. Effects of Surface Treatments on Tensile, Thermal and Fibre-matrix Bond Strength of Coir and Pineapple Leaf Fibres with Poly Lactic Acid. *Journal of Bionic Engineering*. 15(1), 1035-1046.
61. Farah Nadia Mohammad Padzil, **Hidayah Ariffin**, Sarani Zakaria, Piotr Boruszewski, Krzysztof J. Krajewski, Mariusz L. Maminski. 2018. Effect of poplar cultivar "Hybrid 275" fiber impregnation with 1,3-dimethylol-4,5-dihydroxyethyleneurea on the properties of high density fiberboards. *BioResources*. 13(4), 7470-7480.
62. Norlailiza Ahmad, Mohd Rafein Zakaria*, Mohd Zulkhairi Mohd Yusoff, Fujimoto, S., Inoue, H., **Hidayah Ariffin**, Mohd Ali Hassan, Yoshihito Shirai. **2018**. Subcritical water-carbon dioxide pretreatment of oil palm mesocarp fiber for xylooligosaccharide and glucose production. *Molecules*. 23(6), Article 1310.
63. Lau Kia Kian, Mohamad Jawaid*, **Hidayah Ariffin**, Othman Y. Alothman. **2017**. Isolation and Characterization of Microcrystalline Cellulose from Roselle Fibers. *International Journal of Biological Macromolecules*. 103, 931-940.
64. Tengku Arisyah Tengku Yasim-Anuar, **Hidayah Ariffin***, Mohd Nor Faiz Norrahim, Mohd. Ali Hassan. **2017**. Factors Affecting Spinnability of Oil Palm Mesocarp Fiber Cellulose Solution for the Production of Microfiber. *BioResources*. 12(1), 715.734.
65. Noor Ida Amalina Ahamad Nordin, **Hidayah Ariffin***, Mohd Ali Hassan, Yoshihito Shirai, Yoshito Ando, Nor Azowa Ibrahim, Wan Md Zin Wan Yunus. **2017**. Superheated Steam Treatment of Oil Palm Mesocarp Fiber Improved the Properties of Fiber-Polypropylene Biocomposite. *BioResources*. 12(1), 68-81.
66. Nur Sharmila Sharip, **Hidayah Ariffin***, Mohd Ali Hassan, Haruo Nishida and Yoshihito Shirai. **2016**. Characterization and Application of Bioactive Compounds in Oil Palm Mesocarp Fiber Superheated Steam Condensate as an Antifungal Agent. *RSC Advances*. 6 (88), 84672-84683.
67. Muhammad Nazmir Mohd Warid, **Hidayah Ariffin***, Mohd Ali Hassan and Yoshihito Shirai. **2016**. Optimization of Superheated Steam Treatment to Improve Surface Modification of Oil Palm Biomass Fiber. *BioResources*. 11(3), 5780-5796.
68. Dhurga Devi Rajaratanam, **Hidayah Ariffin***, Mohd Ali Hassan and Haruo Nishida. **2016**. Changes in diad sequence distribution by preferential chain scission during the thermal hydrolysis of poly(3-hydroxybutyrate-co-3-hydroxyhexanoate). *Polymer Journal*. 1-4.
69. Kubra Eksiler, Yoshito Andou*, Farouk Yilmaz, Yoshihito Shirai, **Hidayah Ariffin**, Mohd Ali Hassan. **2016**. Dynamically controlled fibrillation under combination of ionic liquid with mechanical grinding. *Journal of Applied Polymer Science*. In press.
70. Chern Chiet Eng, Nor Azowa Ibrahim*, Norhazlin Zainuddin, **Hidayah Ariffin**, Wan Md Zin Wan Yunus. **2016**. Chemical modification of oil palm mesocarp fiber by methacrylate silane: Effects on morphology, mechanical, and dynamic mechanical properties of biodegradable hybrid composites. *BioResources*. 11, 861-872.
71. Yoon Yee Then, Nor Azowa Ibrahim*, Norhazlin Zainuddin, Buong Woei Chieng, Chern Chiet Eng, **Hidayah Ariffin**, Wan Md Zin Wan Yunus. **2016**.

- Enhancement of tensile properties of surface treated oil palm mesocarp fiber/poly(Butylene succinate) biocomposite by (3-aminopropyl)trimethoxysilane. *Materials Science Forum*. 846, 665-672.
72. Nur Falia Shazana Manja Farid, **Hidayah Ariffin***, Mohd Rahimi Zakaria Mamat, Mior Ahmad Khushairi Mohd Zahari, Mohd Ali Hassan. **2015**. Non-solvent pretreatment of poly(3-hydroxybutyrate) for high purity biocrotonic acid production. *RSC Advances*. 5, 33546–33553.
73. Keisaku Yamashiro, **Hidayah Ariffin**, Haruo Nishida*. **2015**. Tar-free and Benzo[*a*]pyrene-free Hydrothermal liquefaction of bamboo and antibacterial property of recovered vinegar. *Chemistry Letters*. Vol 44, 1342-1344.
74. Mior Ahmad Khushairi Mohd Zahari, **Hidayah Ariffin**, Mohd Noriznan Mokhtar, Jailani Salihon, Yoshihito Shirai and Mohd Ali Hassan*. **2015**. Case Study for a Biorefinery Utilizing Renewable Biosugars from Oil Palm Frond for the Production of Poly(3-hydroxybutyrate) Bioplastic. *Journal of Cleaner Production*. Vol 87, 284-290pp.
75. Yoon Yee Then, Nor Azowa Ibrahim*, Norhazlin Zainuddin, Buong Woei Chieng, **Hidayah Ariffin**, Wan Md Zin Wan Yunus. **2015**. Effect of 3-Aminopropyltrimethoxysilane on Chemically Modified Oil Palm Mesocarp Fiber/Poly (butylene succinate) Biocomposite. *BioResources*. 10 (2), 3577-3601.
76. Noor Ida Amalina Ahamad Nordin, **Hidayah Ariffin***, Mohd Ali Hassan, Nor Azowa Ibrahim, Yoshihito Shirai, and Yoshito Andou. **2015**. Effect of Milling Methods on Tensile Properties of Polypropylene / Oil Palm Mesocarp Fiber Biocomposite. *Pertanika Journal of Science and Technology (JST)*. 23 (2), 325-337.
77. Yoon Yee Then, Nor Azowa Ibrahim*, Norhazlin Zainuddin, **Hidayah Ariffin**, Buong Woei Chieng, Wan Md Zin Wan Yunus. **2015**. Influence of Fiber Content on Properties of Oil Palm Mesocarp Fiber/Poly (butylene succinate) Biocomposites. *BioResources*. 10 (2), 2949 – 2968.
78. Yoon Yee Then, Nor Azowa Ibrahim*, Norhazlin Zainuddin, Buong Woei Chieng, **Hidayah Ariffin**, Wan Md Zin Wan Yunus. **2015**. Influence of Alkaline-Peroxide Treatment of Fiber on the Mechanical Properties of Oil Palm Mesocarp Fiber/Poly(butylene succinate) Biocomposite. *BioResources*. 10 (1), 1730-1746.
79. Yoon Yee Then, Nor Azowa Ibrahim*, Norhazlin Zainuddin, **Hidayah Ariffin**, Wan Md Zin Wan Yunus, Buong Woei Chieng. **2015**. Static mechanical, interfacial, and water absorption behaviors of alkali treated oil palm mesocarp fiber reinforced poly(butylene succinate) biocomposites. *BioResources*. 10 (1), 123-136.
80. Subbian Karuppuchamy*, Yoshito Andou, Haruo Nishida, Noor Ida Amalina Ahamad Nordin, **Hidayah Ariffin**, Mohd Ali Hassan and Yoshihito Shirai. **2015**. Superheated Steam Treated Oil Palm Frond Fibers and Their Application in Plastic Composites. *Advanced Science, Engineering and Medicine*. Vol. 7, 1–6pp.
81. Mohd Rahimi Zakaria Mamat, **Hidayah Ariffin***, Mohd Ali Hassan, Mior Ahmad Khushairi Mohd Zahari. **2014**. Bio-based Production of Crotonic Acid by Pyrolysis of Poly(3-hydroxybutyrate) Inclusions. *Journal of Cleaner Production*. Vol 83, 463-472pp.
82. Che Mohd Hakim Che Maail, **Hidayah Ariffin***, Mohd Ali Hassan, Umi Kalsom Md Shah, and Yoshihito Shirai. **2014**. Oil Palm Frond Juice as Future Fermentation Substrate: A Feasibility Study. *BioMed Research International*. Volume 2014, Article ID 465270.

83. Mior Ahmad Khushairi Mohd Zahari, Sharifah Sopliah Syed Abdullah, Ahmad Muhaimin Roslan, **Hidayah Ariffin***, 2014. Yoshihito Shirai and Mohd Ali Hassan. Efficient utilization of oil palm frond for bio-based products and biorefinery. *Journal of Cleaner Production*. Vol 65, 252-260pp.
84. Noor Farisha Abd. Rahim, Kohtaro Watanabe, **Hidayah Ariffin***, Yoshito Andou*, Mohd Ali Hassan, Yoshihito Shirai. 2014. Design of Bio-based Monomers from Oleic and Linoleic Acids for Greener Polyester. *Chemistry Letters*. Vol 43 (9), 1517 - 1519pp.
85. Yoon Yee Then, Nor Azowa Ibrahim, Norhazlin Zainuddin, **Hidayah Ariffin**, Wan Md Zin Wan Yunus, Buong Woei Chieng. 2014. The Influence of Green Surface Modification of Oil Palm Mesocarp Fiber by Superheated Steam on the Mechanical Properties and Dimensional Stability of Oil Palm Mesocarp Fiber/Poly (butylene succinate) Biocomposite. *International Journal of Molecular Sciences*. Vol 15 (9), 15344-15357pp.
86. Chern Chiet Eng, Nor Azowa Ibrahim, Norhazlin Zainuddin, **Hidayah Ariffin**, Wan Md Zin Wan Yunus. 2014. Impact Strength and Flexural Properties Enhancement of Methacrylate Silane Treated Oil Palm Mesocarp Fiber Reinforced Biodegradable Hybrid Composites. *The Scientific World Journal*. Volume 2014 (2014), Article ID 213180.
87. Chern Chiet Eng, Nor Azowa Ibrahim, Norhazlin Zainuddin, **Hidayah Ariffin**, Wan Md Zin Wan Yunus. 2014. Compositional and morphological changes of chemical modified oil palm mesocarp fiber by alkaline bleaching and silane coupling agents. *BioResources*. Vol 9 (3), 5290-5301pp.
88. Chern Chiet Eng, Nor Azowa Ibrahim, Norhazlin Zainuddin, **Hidayah Ariffin**, Wan Md Zin Wan Yunus, Yoon Yee Then. 2014. Enhancement of Mechanical and Dynamic Mechanical Properties of Hydrophilic Nanoclay Reinforced Polylactic Acid/Polycaprolactone/Oil Palm Mesocarp Fiber Hybrid Composites. *International Journal of Polymer Science*. Volume 2014 (2014), Article ID 715801.
89. Mohd Nor Faiz Norrahim, **Hidayah Ariffin***, Mohd Ali Hassan, Nor Azowa Ibrahim, Haruo Nishida. 2013. Performance Evaluation and Chemical Recyclability of Polyethylene/Poly-(3-hydroxybutyrate-co-3-hydroxyvalerate) blend for Sustainable Packaging. *RSC Advances*. Vol 3, 24378-24388.
90. Noor Ida Amalina Ahamad Nordin, Subbian Karuppuchamy, Wan Md Zin Wan Yunus, Nor Azowa Ibrahim, Yoshihito Shirai, Haruo Nishida, Mohd Ali Hassan, Yoshito Andou and **Hidayah Ariffin***. 2013. Modification of oil palm mesocarp fiber using green superheated steam treatment. *Molecules*. 18, 9132-9146.
91. Mohd Ali Hassan, Lian-Ngit Yee, Phang Lai Yee, **Hidayah Ariffin**, Abdul Rahim Raha, Yoshihito Shirai, Kumar Sudesh. 2013. Sustainable Production of polyhydroxyalkanoates from renewable oil palm biomass. *Biomass & Bioenergy*. Vol. 50, 1-9pp.
92. Yoon Yee Then, Nor Azowa Ibrahim, Norhazlin Zainuddin, **Hidayah Ariffin** and Wan Md. Zin Wan Yunus. 2013. Oil palm mesocarp fiber as new lignocellulosic material for fabrication of polymer/fiber biocomposites. *International Journal of Polymer Science*. Article ID 797452.
93. Chern Chiet Eng, Nor Azowa Ibrahim, Norhazlin Zainuddin, **Hidayah Ariffin**, Wan Md. Zin Wan Yunus, Yoon Yee Then and Cher Chean Teh. 2013. Enhancement of

| | |
|--|---|
| | <p>Mechanical and Thermal Properties of Polylactic Acid/ Polycaprolactone Blends by Hydrophilic Nanoclay. <i>Indian Journal of Materials Science</i>. Vol 2013. Article ID 816503.</p> <p>94. Nazlina Haiza Mohd Yasin, Masaharu Fukuzaki, Toshinari Maeda, Toshiki Miyazaki, Che Mohd Hakiman Che Maail, Hidayah Ariffin and Thomas K Wood. 2013. Biohydrogen production from oil palm frond juice and sewage sludge by a metabolically engineered <i>Escherichia coli</i> strain. <i>International Journal of Hydrogen Energy</i>. Vol. 38, 10277-10283pp.</p> <p>95. Mohd Rafein Zakaria, Hidayah Ariffin, Suraini Abd-Aziz, Mohd Ali Hassan, Yoshihito Shirai. 2013. Improved Properties of Poly (3-hydroxybutyrate-co-3-hydroxyvalerate) Produced by <i>Comamonas</i> sp. EB172 Utilizing Volatile Fatty Acids by Regulating the Nitrogen Source. <i>Biomed Research International</i>. Volume 2013 (2013), Article ID 237806.</p> <p>96. Mitra Mohammadi, Mohd Ali Hassan, Lai-Yee Phang, Yoshihito Shirai, Hasfalina Che Man, Hidayah Ariffin*. 2012. Intracellular polyhydroxyalkanoates recovery by cleaner halogen-free methods towards zero emission in the palm oil mill. <i>Journal of Cleaner Production</i>. 37 : 353-360pp.</p> <p>97. Mior Ahmad Khushairi Mohd Zahari, Hidayah Ariffin*, Mohd Noriznan Mokhtar, Jailani Salihon, Yoshihito Shirai and Mohd Ali Hassan. 2012. Factors affecting poly(3-hydroxybutyrate) production from oil palm frond juice by <i>Cupriavidus necator</i> (CCUG52238T). <i>Journal of Biomedicine and Biotechnology</i>. Volume 2012, Article ID 125865, 8 pages.</p> <p>98. Noor Azman Mohd Johar, Mohd Ali Hassan, Mohd Rafein Zakaria, Phang Lai Yee, Yoshihito Shirai, Hidayah Ariffin*. 2012. Evaluation of Factors Affecting Polyhydroxyalkanoates Production by <i>Comamonas</i> sp. EB172 using Central Composite Design. <i>Malaysian Journal of Microbiology</i>. 8 (3): 184-190</p> <p>99. Mior Ahmad Khushairi Mohd Zahari, Mohd Rafein Zakaria, Hidayah Ariffin, Mohd Noriznan Mokhtar, Jailani Salihon, Yoshihito Shirai and Mohd Ali Hassan. 2012. Renewable Sugars from Oil Palm Frond Juice as an Alternative Novel Fermentation Feedstock for Value-Added Products. <i>Bioresource Technology</i>. Volume 110, 566-571 pp.</p> <p>100. Yee Lian Ngit, Tabassum Mumtaz, Mitra Mohammadi, Phang Lai Yee, Yoshito Ando, Raha Abd Rahim, Kumar Sudesh, Hidayah Ariffin, Mohd Ali Hassan, Mohd Rafein Zakaria. 2012. Polyhydroxyalkanoate Synthesis by Recombinant <i>Escherichia coli</i> JM109 Expressing PHA Biosynthesis Genes from <i>Comamonas</i> sp. EB172. <i>Journal of Microbial and Biochemical Technology</i>. Vol 4 (5), 103-110pp.</p> <p>101. Mitra Mohammadi, Mohd Ali Hassan, Phang Lai Yee, Yoshihito Shirai, Hasfalina Che Man, Hidayah Ariffin, Amirul Al-Asyraf and Siti Nor Syairah. 2012. Efficient PHA recovery from recombinant <i>Cupriavidus necator</i> by using low concentration of NaOH. <i>Environmental Engineering Science</i>. 29(8): 783-789 pp.</p> <p>102. Mitra Mohammadi, Mohd Ali Hassan, Yoshihito Shirai, Hasfalina Che Man, Hidayah Ariffin, Yee Lian Ngit, Tabassum Mumtaz, Chong Mei Ling and Phang Lai Yee. 2012. Separation and Purification of Polyhydroxyalkanoates From Newly Isolated <i>Comamonas</i> sp. EB172 by Simple Digestion with Sodium Hydroxide. <i>Separation Science and Technology</i>. Volume 47, 534-541 pp.</p> <p>103. Mitra Mohammadi, Mohd Ali Hassan, Phang Lai Yee, Hidayah Ariffin, Yoshihito Shirai, Yoshito Ando. 2012. Recovery and purification of intracellular</p> |
|--|---|

- polyhydroxyalkanoates from recombinant *Cupriavidus necator* using water and ethanol. *Biotechnology Letters*. 34 (2), 253-259 pp.
104. Hiroshi Nonaka, **Hidayah Ariffin**, Masamitsu Funaoka. **2011**. Basic Characteristics of Cellulase Immobilized on Lignophenol. *Kobunshi Ronbunshu*. Vol 68 (5), 315-319 pp.
105. **Hidayah Ariffin***, Haruo Nishida, Mohd Ali Hassan, Yoshihito Shirai. **2010**. Chemical recycling of polyhydroxyalkanoates as a method towards sustainable development. *Biotechnology Journal*. Vol 5, 484-492pp.
106. **Hidayah Ariffin***, Haruo Nishida, Yoshihito Shirai, Mohd Ali Hassan. **2010**. Highly selective transformation of poly[(R)-3-hydroxybutyric acid] into *trans*-crotonic acid by catalytic thermal degradation. *Polymer Degradation and Stability*. Vol 95 (8), 1375-1381pp.
107. Mohd Rafein Zakaria, **Hidayah Ariffin**, Noor Azman Mohd Johar, Suraini Abd-Aziz, Haruo Nishida, Yoshihito Shirai and Mohd Ali Hassan. **2010**. Biosynthesis and characterization of poly(3-hydroxybutyrate-co-3-hydroxyvalerate) copolymer from wild-type *Comamonas* sp. EB172. *Polymer Degradation and Stability*. Vol 95 (8), 1382-1386 pp.
108. **Hidayah Ariffin**, Haruo Nishida, Yoshihito Shirai and Mohd Ali Hassan. **2009**. Anhydride Production as an Additional Mechanism of Poly (3-hydroxybutyrate) Pyrolysis. *Journal of Applied Polymer Science*, Volume 111, 323-328 pp.
109. **Hidayah Ariffin**, Haruo Nishida, Yoshihito Shirai and Mohd Ali Hassan. **2008**. Determination of Multiple Thermal Degradation Mechanisms of Poly(3-hydroxybutyrate). *Polymer Degradation and Stability*, Volume 93, 1433-1439 pp.
110. **Hidayah Ariffin***, Mohd Ali Hassan, Umi Kalsom Md Shah, Norhafizah Abdullah, Farinazleen Mohd Ghazali and Yoshihito Shirai. **2008**. Production of bacterial endoglucanase from pretreated oil palm empty fruit bunch by *Bacillus pumilus* EB3. *Journal of Bioscience and Bioengineering*, Volume 106 (3), 231-236 pp.
111. Mohd Rafein Zakaria, Suraini Abd Aziz, **Hidayah Ariffin**, Nor'Aini Abd Rahman, Phang Lai Yee and Mohd Ali Hassan. **2008**. *Comamonas* sp. EB172 isolated from digester treating palm oil mill effluent as potential polyhydroxyalkanoate (PHA) producer. *African Journal of Biotechnology*. Volume 7 (22), 4118-4121 pp.
112. **Hidayah Ariffin***, Haruo Nishida, Yoshihito Shirai and Mohd Ali Hassan. **2008**. Non-random degradation behavior of Poly (3-hydroxybutyrate) in pyrolysis. *Polymer Preprints*, Volume 49(2), 451p.
113. **H. Ariffin***, M.A. Hassan, M.S. Umi Kalsom, N. Abdullah and Y. Shirai. **2008**. The effect of physical, chemical and thermal pretreatments on the enzymatic hydrolysis of oil palm empty fruit bunch. *Journal of Tropical Agriculture and Food Science*. Volume 36(2), 259-268 pp.
114. **Hidayah Ariffin***, Mohd Ali Hassan, Umi Kalsom Md Shah, Norhafizah Abdullah and Yoshihito Shirai. **2006**. Production and Characterisation of Cellulase by *Bacillus pumilus* EB3. *International Journal of Engineering and Technology*, Volume 3 (1), 47-53 pp.

| | |
|------------------|--|
| Books/Monographs | <p>Ariffin, H., Hassan, M.A. and Salit, M.S. 2019. <i>Lignocellulose for Future Bioeconomy</i>. Elsevier: Oxford</p> <p>Ariffin, H. 2025. <i>Innovating Oil Palm Biomass towards Circular Bioeconomy</i>. Penerbit UPM: Serdang.</p> |
| Chapter in book | <ol style="list-style-type: none"> 1. Farah Nadia Mohamad Padzil, Ainun Zuriyati Mohamed As'ari, Naziratul Asikin Abu Kassim, Lee Seng Hua, Lee Ching Hao, Hidayah Ariffin, Edi Syams Zainudin. 2020. Chemical, Biological and Physical Treatments of Pineapple Leaf Fibers. In: <i>Green Energy and Technology</i>. Springer. 2. Nur Sharmila Sharip and Hidayah Ariffin*. 2019. Polymeric Composites for Joint Replacement. In: Swain, S. and Jawaid, M. eds. <i>Nanostructured Polymer Composites for Biomedical Applications</i>. Elsevier: Amsterdam 3. Liana Noor Megashah, Hidayah Ariffin*, Mohd Ali Hassan and Farah Nadia Mohammad Padzil. 2019. Multi-step, non-chlorinated treatment for cellulose isolation from oil palm fronds. In: Ariffin, H., Hassan, M.A. and Salit, M.S. eds. <i>Lignocellulose for Future Bioeconomy</i>. Elsevier: Oxford 4. Hidayah Ariffin*, Tengku Arisyah Tengku Yasim-Anuar, Nurfarah Izzati Amadi, Farah Nadia Mohammad Padzil. 2019. Characterization of Cellulose Nanofiber from Tropical Plant Resources. In: Ariffin, H., Hassan, M.A. and Salit, M.S. eds. <i>Lignocellulose for Future Bioeconomy</i>. Elsevier: Oxford 5. Siti Jamilah Hanim Mohd Yusof, Mohd Rafein Zakaria, Ahmad Muhaimin Roslan, Ahmad Amiruddin Mohd Ali, Yoshihito Shirai, Hidayah Ariffin, Mohd Ali Hassan*. 2019. Oil palm biomass bio-refinery for future bioeconomy in Malaysia. In: Ariffin, H., Hassan, M.A. and Salit, M.S. eds. <i>Lignocellulose for Future Bioeconomy</i>. Elsevier: Oxford 6. Mohammed Abdilllah Ahmad Farid, Mohd Ali Hassan*, Mohd Ridzuan Othman, Yoshihito Shirai and Hidayah Ariffin. 2019. Sustainability of Oil Palm Biomass-based Products. In: Ariffin, H., Hassan, M.A. and Salit, M.S. eds. <i>Lignocellulose for Future Bioeconomy</i>. Elsevier: Oxford 7. Hidayah Ariffin*, Mohd Nor Faiz Norrrahim, Tengku Arisyah Tengku Yasim-Anuar, Haruo Nishida, Mohd Ali Hassan, Nor Azowa Ibrahim and Wan Md Zin Wan Yunus. 2017. Oil palm biomass cellulose-fabricated polylactic acid composites for packaging applications. In: Jawaid, M. and Swain, S.K. eds. <i>Bionanocomposites for packaging applications</i>. 99-105 pp. Springer: Cham. 8. Haruo Nishida, Hidayah Ariffin, Yoshihito Shirai and Mohd Ali Hassan. 2010. Precise Depolymerization of Poly(W-hydroxybutyrate) by Pyrolysis. In: <i>Biopolymers</i>. Ed. Magdy M. Elnashar. 369-386 pp. Sciyo: Rijeka |
| Proceedings | <ol style="list-style-type: none"> 1. Hidayah Ariffin*, Liana Noor Megashah, Mohd Ali Hassan. 2019. Steam pretreatment enhancing productivity of cellulose nanofibrils from oil palm biomass. <i>International Conference on Nanotechnology for Renewable Materials 2019</i>. Volume 1. 220-229. |

2. Nur Sharmila Sharip and **Hidayah Ariffin***. 2019. Cellulose nanofibrils for biomaterial applications. *Materials Today: Proceedings*. Volume 16. 1959-1968.
3. Tengku Arisyah Tengku Yasim Anuar, **Hidayah Ariffin***, Mohd Ali Hassan. 2018. Characterization of Cellulose Nanofiber from Oil Palm Mesocarp Fiber produced by Ultrasonication. *IOP Conference Series: Material & Science Engineering*. 368, 012033. doi:10.1088/1757-899X/368/1/012033
4. Liana Noor Megashah, **Hidayah Ariffin***, Mohd Rafein Zakaria, Yoshito Ando. Properties of Cellulose Extract From Different Types of Oil Palm Biomass. 2018. *IOP Conference Series: Material & Science Engineering*. 368, 012049. doi:10.1088/1757-899X/368/1/012049
5. Ramengmawii Siakeng, Mohamad Jawaaid, **Hidayah Ariffin**, Mohd Sapuan Salit. 2018. Thermal properties of coir and pineapple leaf fibre reinforced polylactic acid hybrid composites. *IOP Conference Series: Material & Science Engineering*.
6. Mohd Nor Faiz Norraahim, **Hidayah Ariffin***, Tengku Arisyah Tengku Yasim Anuar, Mohd Ali Hassan, Haruo Nishida, Takayuki Tsukegi. 2018. One-pot nanofibrillation of cellulose and nanocomposite production in a twin-screw extruder. *IOP Conference Series: Material & Science Engineering*. 368, 012034. doi:10.1088/1757-899X/368/1/012034
7. Ramengmawii Siakeng, Mohamad Jawaaid, **Hidayah Ariffin**, Mohd Sapuan Salit. 2018. Physical properties of coir and pineapple leaf fibre reinforced polylactic acid hybrid composites. *IOP Conference Series: Material & Science Engineering*.
8. Liana Noor Megashah, **Hidayah Ariffin***, Mohd Rafein Zakaria, Yoshito Ando. 2018. Characteristics of Cellulose from Oil Palm Mesocarp Fibres Extracted by Multi-step Pretreatment Methods. *IOP Conference Series: Material & Science Engineering*. 368, 012001. doi:10.1088/1757-899X/368/1/012001
9. **Hidayah Ariffin***, Haruo Nishida, Yoshihito Shirai and Mohd Ali Hassan. 2008. Non-random degradation behavior of Poly (3-hydroxybutyrate) in pyrolysis. *Polymer Preprints*, Volume 49(2), 451p.
10. **Hidayah Ariffin***, Mohd Nor Faiz Norraahim, Tengku Arisyah Tengku Yasim-Anuar, Mohd Ali Hassan. 2016. Nanocellulose fiber from oil palm biomass. Invited speaker. CIPST-KTAPPI Forum. Kangwon National University, Chuncheon, South Korea. 27 – 29 September 2016.
11. **Hidayah Ariffin***, Mohd Rahimi Zakaria Mamat, Nur Falia Shazana Manja Farid and Mohd Ali Hassan. 2016. Biobased Production of Crotonic Acid, a Precursor for Industrially Important Chemicals. Eco-Bio 2016, Rotterdam, The Netherlands. 6-9 March 2016.
12. **Hidayah Ariffin***, Mohd Rahimi Zakaria Mamat, Nur Falia Shazana Manja Farid and Mohd Ali Hassan. 2015. Alternative Route to the Production of Industrially Important Chemicals. AFOB Regional Symposium 2015 (ARS 2015), Universitas Indonesia, Depok, Indonesia. 27-30th May 2015.

13. Mohd Rahimi Zakaria Mamat, Nur Falia Shazana Manja Farid, **Hidayah Ariffin***, Mohd Ali Hassan. **2014**. Bio-based crotonic acid production. The 27th International Symposium on Chemical Engineering (ISChE2014). PWTC, Kuala Lumpur, Malaysia. 6th December 2014.

14. Noor Farisha Abd. Rahim, Kohtaro Watanabe, **Hidayah Ariffin**, Yoshito Andou, Mohd Ali Hassan, Yoshihito Shirai. Bio-based Monomers from Oleic and Linoleic Acids for Greener Polyester. International Symposium on Advanced Polymeric Materials 2014 (ISAPM 2014). PWTC, Kuala Lumpur, Malaysia. 14 – 15th May 2014.

15. Mohd Rahimi Zakaria Mamat, **Hidayah Ariffin***, Mohd Ali Hassan and Mior Ahmad Khushairi Mohd Zahari. **2014**. Novel bio-based production of crotonic acid. AFOB Regional Symposium 2014 (ARS 2014), Seri Pacific Hotel, Kuala Lumpur, Malaysia. 9-11th February 2014.

16. Nur Falia Shazana Manja Farid, **Hidayah Ariffin***, Mohd Ali Hassan and Mior Ahmad Khushairi Mohd Zahari. **2014**. Improved bio-based crotonic acid recovery by mild alkaline treatment of poly(3-hydroxybutyrate) produced by *Cupriavidus necator* KCTC 2469. AFOB Regional Symposium 2014 (ARS 2014), Seri Pacific Hotel, Kuala Lumpur, Malaysia. 9-11th February 2014.

17. Mior Ahmad Khushairi Mohd Zahari, **Hidayah Ariffin** and Mohd Ali Hassan. **2014**. Enhanced poly(3-hydroxybutyrate) production from oil palm frond juice by *Cupriavidus necator* NCIMB 11599. AFOB Regional Symposium 2014 (ARS 2014), Seri Pacific Hotel, Kuala Lumpur, Malaysia. 9-11th February 2014.

18. Nur Sharmila Sharip, Muhammad Nazmir Mohd Warid, Noor Ida Amalina Ahamad Nordin, **Hidayah Ariffin***, Mohd Ali Hassan and Yoshihito Shirai. **2014**. Effect of steam hydrolysis reaction temperature on the composition of oil palm mesocarp fiber condensate. Seri Pacific Hotel, Kuala Lumpur, Malaysia. 9-11th February 2014.

19. **Hidayah Ariffin***, Elmy Nahida Othman, Haruo Nishida, Yoshito Ando, Yoshihito Shirai and Mohd Ali Hassan. **2013**. Depolymerization of poly(3-hydroxybutyrate) by steam treatment. 62nd Symposium on Macromolecules. Kanazawa University, Kanazawa, Japan. 11-13th September 2013.

20. Yoshito Andou, Kazutoshi Kunimoto, Haruo Nishida, Yoshihito Shirai, Noor Ida Amalina, **Hidayah Ariffin**, Mohd Ali Hassan. **2013**. Development of polymer composite using oil palm fiber. 62nd Symposium on Macromolecules. Kanazawa University, Kanazawa, Japan. 11-13th September 2013.

21. Che Mohd Hakiman Che Maail, **Hidayah Ariffin***, Mohd Ali Hassan, Umi Kalsom Md Shah, Yoshihito Shirai. **2013**. Fermentable sugars from oil palm frond petiole. International Congress of the Malaysian Society for Microbiology 2013 (ICMSM 2013). Langkawi Lagoon Resort, Langkawi, Malaysia. 12-15th December 2013.

| H. PROJEK PENYELIDIKAN TERDAHULU (Past Research Project) | | | | | |
|---|--|----------------|-------------|-----------------------|---------------|
| Project No. | Project Title | Role | Year | Source of fund | Status |
| | Lignin-containing cellulose nanofibril prepared using superheated steam treatment for improving properties of hybrid PP/graphene/LCNF nanocomposites | Project Leader | 2024-2026 | PRSB | On-going |

| | | | | | |
|---------------|--|----------------|-------------------------|---|-----------|
| | Technology Needs, Carbon Footprint, and Market Potential of Oil Palm Biomass Business | Project leader | 2024-2025 | Mitsubishi Heavy Industries Asia Pacific (MHI-AP) | Completed |
| | Strategic Utilization of Oil Palm Biomass in Malaysia | Project leader | 2024 (completed) | Mitsubishi Heavy Industries Asia Pacific (MHI-AP) | Completed |
| | Carboxymethylation of cellulose nanofibrils for use as filler and coating material in oil palm biomass pulp-based products | Project leader | 2023 – 2026 | HICOE, KPT | On-going |
| | Nanocellulose Characterization and Preliminary Testing of Polypropylene/Nanocellulose Composites | Project leader | 2022 | SCG Packaging PLC, Thailand | Completed |
| | Production and Characterization of Nanocellulose from Jute | Project leader | 2021 – 2022 (completed) | Nagase Singapore Pte. Ltd. | Completed |
| | Accelerating Social Implementation for SDGs - Commercialization of Biodegradable Nano-Composites in Malaysia | Project leader | 2020 – 2022 | Japan Science and Technology Agency (JST), Japan | Completed |
| | Effect of Residual Lignin in Oil Palm Empty Fruit Bunch Cellulose Nanofiber on Dispersion, Mechanical and Thermal Properties of Polypropylene-based Bionanocomposite | Project leader | 2019 - 2021 | Geran Putra Berimpak | Completed |
| | Improving Crystallization Behavior and Mechanical Properties of Biodegradable Polymers using Nanofibrillated Cellulose and Nanobiochar as Nucleating Agent | Project leader | 2019-2022 | Fundamental Research Grant Scheme (FRGS), MOE | Completed |
| | Sustainable Food Packaging Material from Oil Palm Empty Fruit Bunch (EFB) Cellulosic Fibre Extracted Using Hybrid Chemical-Mechanical-Thermal Process | Project leader | 2019-2021 | Industry (Nextgreen Pulp and Paper Sdn. Bhd.) | Completed |
| 6369111 | Production of Nanocellulose from Tropical Biomass and Its Application as Reinforcement Material in Biocomposites | Project leader | 2017 - 2019 | HICoE, KPM | Completed |
| 2018-0072/845 | The Future of Renewable Energy and Palm Oil Industry in Malaysia | Project leader | 2018 - 2019 | Mitsubishi Heavy Industries Asia Pacific | Completed |

| | | | | | |
|-----------------|---|----------------|-------------|--|-----------|
| | Collaborative Research on the Use of Hydrothermal Carbonization Technology for Treatment of Oil Palm Biomass to be Used in Composting: Part 1 – Preliminary Study | Project leader | 2018 - 2019 | Mitsubishi Heavy Industries Asia Pacific | Completed |
| 9003255 | Nanocellulose | Project leader | 2017 - 2019 | Geran Innohub, UPM | Completed |
| 9523000 | Cellulose Extraction by Eco-Friendly Treatment Method for Improving Cellulose Throughput During Wet Disk Milling to Enhance Cellulose Nanofiber Production | Project leader | 2017 - 2019 | Geran Putra Berimpak, UPM | Completed |
| 9519300 | High throughput nanocellulose production from oil palm biomass | Project leader | 2017 - 2019 | Geran Putra IPS, UPM | Completed |
| 03-01-14-1399FR | Improved use of superheated steam for controlled hydrolysis of polyhydroxyalkanoates towards oligoesters production | Project leader | 2014-2017 | FRGS, KPT | Completed |
| 6300156 | Overall title: Promotion of Green Economy with Palm Oil Industry for Biodiversity Conservation in Malaysia Sub-project: Chemical-free Pre-treatment of Oil Palm Biomass for Fermentable sugars, Nanofiber and Biocomposite | Member | 2014-2018 | SATREPS project, KPT | Completed |
| 9480900 | Nanocellulose Fiber from Oil Palm Biomass | Project leader | 2016-2017 | Geran Putra IPS (GP-IPS), UPM | Completed |
| 9433917 | Optimization of superheated steam treatment conditions for oil palm mesocarp fiber to be used in biocomposite | Project leader | 2014-2016 | Geran Putra IPS (GP-IPS), UPM | Completed |
| 05-02-12-2321RU | Alternative route to crotonic acid production by pyrolysis of polyhydroxybutyrate-containing bacterium | Project leader | 2013 - 2015 | RUGS, UPM | Completed |
| | Elucidation of the effects of amino acids and proteinaceous bioactive compounds produced from agro-wastes as poultry feed | Member | 2012 - 2017 | Top-Down LRGS, MOHE | Completed |
| | Biosynthesis and metabolomics of antimicrobial compounds from endophytic fungi for controlling anthracnose disease in dragon fruit | Member | 2012 - 2013 | Science Fund, MOSTI | Completed |
| 05-05-10-1071RU | Chemical Recycling of Polyhydroxyalkanoates by Steam Hydrolysis | Project leader | 2010 – 2012 | RUGS, UPM | Completed |

| | | | | | |
|----------------|--|----------------|-------------|-------------------|-----------|
| 02-10-10-966FR | Controlled Degradation Mechanisms of Bioplastics (Polyhydroxyalkanoates, PHA) during Steam Hydrolysis for Chemical Recycling | Project leader | 2010-2012 | FRGS, MOHE | Completed |
| | Scaled Up Pilot Process for The Production of Bacterial Polyhydroxyalkanoates (PHA), a Biodegradable Plastic Material Using Palm Oil and its Derivatives | Member | 2008 - 2012 | Technofund, MOSTI | Completed |