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PENSYARAH UNIVERSITI (TETAP)
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A. PERSONAL DETAILS

UMK JOIN DATE	15-Sep-2008
DATE OF APPOINTMENT FOR CURRENT POSITION	01-Nov-1993
DATE OF CONFIRMATION FOR CURRENT POSITION	07-Apr-2010
EDUCATION(S)	• **(2013) UNIVERSITI TEKNOLOGI MALAYSIA** IJAZAH DOKTOR FALSAFAH KEJURUTERAAN AWAM • **(2006) UNIVERSITI TEKNOLOGI MALAYSIA (UTM)** IJAZAH SARJANA PENGURUSAN ALAM SEKITAR PENGURUSAN ALAM SEKITAR • **(2002) UNIVERSITI TEKNOLOGI MALAYSIA** IJAZAH SARJANA MUDA KEJURUTERAAN AWAM KEJURUTERAAN AWAM • **(1997) POLITEKNIK KOTA BHARU KELANTAN** DIPLOMA KEJURUTERAAN AWAM • **(1988) POLITEKNIK KOTA BHARU, KELANTAN** CERTIFICATE KEJURUTERAAN AWAM (PEMBINAAN) • **(1985) SEK.MEN. DATO'MAHMUD PADUKA RAJA TANAH MERAH** SPM
GROUP OF EXPERTISE	
	• Award Name: **Anugerah Perkhidmatan Cemerlang (APC) Tahun 2023 (2024)** Awarded by: Universiti Malaysia Kelantan • Award Name: **Anugerah Perkhidmatan Cemerlang (APC) Tahun 2023 (2024)** Awarded by: Universiti Malaysia Kelantan • Award Name: **Peer-Reviewing (2021)** Awarded by: International Journal of Plant & Soil Science • Award Name: **Sijil Penghargaan (2021)** Awarded by: TNC (P & I), UMK • Award Name: **Journal Peer-Reviewing (2021)** Awarded by: Uttar Pradesh Journal of Zoology • Award Name: **PETRONAS walk4trees Virtual Run (2021)** Awarded by: Yayasan Petronas • Award Name: **Workers Day Virtual Run Challenge (2021)** Awarded by: KOSPEN • Award Name: **Langkah Ramadanku Sihat (2021)** Awarded by: Fakulti Sains Bumi • Award Name: **Journal Reviewing (2021)** Awarded by: Plant Cell Biotechnology and Molecular Biology • Award Name: **Sijil Penghargaan (2021)** Awarded by: Pengerusi MNS Kelantan • Award Name: **International UMK FIAT VRUN - MYTHAI 3.0 (2021)** Awarded by: Royal Thai Consulate - General • Award Name: **Journal Reviewing (2021)** Awarded by: Elsevier - Marine Policy • Award Name: **PETRONAS Power of Seven Virtual Run (2021)** Awarded by: PETRONAS • Award Name: **Sijil Penghargaan (2021)** Awarded by: Pengarah Program FSB • Award Name: **Sijil Penghargaan (2020)** Awarded by: Center of Excellence Geopolymer & Green Technology, UNiMEP • Award Name: **Keynote Speaker (2020)** Awarded by: IFERP - ICMCER-2020

AWARD(S)	• Award Name: **Sijil Penghargaan (2020)** Awarded by: TNCA, UMK • Award Name: **Sijil Penghargaan (2020)** Awarded by: Vice Chancellor • Award Name: **Sijil Penghargaan (2019)** Awarded by: Centre for Postgraduate Studies for Dee Koh Han • Award Name: **Sijil Penghargaan (2019)** Awarded by: Centre for Postgraduate Studies for Hamidi Husnin Abdullah • Award Name: **Sijil Penghargaan (2019)** Awarded by: Centre for Postgraduate Studies for Muhamed Sharizal Sirajudin • Award Name: **Sijil Penghargaan (2019)** Awarded by: Naib Canselor • Award Name: **Sijil Penghargaan (2019)** Awarded by: Dewan Bahasa dan Pustaka (DBP) • Award Name: **Anugerah Jasa Universiti Tahun 2018 (2019)** Awarded by: Universiti Malaysia Kelantan • Award Name: **Anugerah Gemilang Universiti Tahun 2018 - Kategori Pentadbiran & Perkhidmatan (2019)** Awarded by: Universiti Malaysia Kelantan • Award Name: **Watikah Perlantikan (2019)** Awarded by: Vice Chancellor • Award Name: **Journal Reviewing (2019)** Awarded by: International Research Journal of Pure and Applied Chemistry • Award Name: **Anugerah Gemilang UMK Tahun 2014 (2015)** Awarded by: Universiti Malaysia Kelantan • Award Name: **Anugerah Perkhidmatan Cemerlang 2013 (2014)** Awarded by: Universiti Malaysia Kelantan • Award Name: **Anugerah Jasa Bakti Tahun 2013 (2014)** Awarded by: Universiti Malaysia Kelantan • Award Name: **Sijil Penghargaan (2014)** Awarded by: Asian Fellowship of Academic Professionals (AFAP) • Award Name: **Sijil Penghargaan (2013)** Awarded by: KPT & MPN - Pelapor Kongres • Award Name: **Anugerah Gemilang UMK Tahun 2012 (2013)** Awarded by: Universiti Malaysia Kelantan • Award Name: **Sijil Pengarah (2013)** Awarded by: Department of Environment Malaysia • Award Name: **Sijil Penghargaan (2013)** Awarded by: University of the Philippines Los Banos - Chairperson • Award Name: **Sijil Penghargaan (2013)** Awarded by: UMK & PNB - National Conference on Higher EDucation Institutions and Community Engagement 2013 • Award Name: **Sijil Penghargaan (2013)** Awarded by: UMK & IAIN Ar-Raniry, Acheh, Indinesia - Chairperson • Award Name: **Sijil Penghargaan (2012)** Awarded by: UTHM, JOHOR Parks & MNS - Endau-Rompin Scientific Expeditions Seminar • Award Name: **Anugerah Gemilang UMK (Keusahawanan) Tahun 2011. (2012)** Awarded by: Universiti Malaysia Kelantan • Award Name: **Sijil Penghargaan (2012)** Awarded by: UTM & DID - Chairperson • Award Name: **Sijil Penghargaan (2012)** Awarded by: University of Bengkulu, Indonesia - RENPER 3 • Award Name: **Anugerah Gemilang UMK (AGU) Tahun 2010 (Penyelidikan & Inovasi) (2011)** Awarded by: Universiti Malaysia Kelantan • Award Name: **Anugerah Gemilang UMK (AGU) (2011)** Awarded by: Universiti Malaysia Kelantan • Award Name: **Sijil Penghargaan (2011)** Awarded by: UMK-Nucleus Camp • Award Name: **Anugerah Gemilang UMK (AGU) (2011)** Awarded by: UMK - Keusahawanan • Award Name: **Sijil Penghargaan (2010)** Awarded by: BAKTI - Program Selangkah ke Universiti • Award Name: **Sijil Penghargaan (2010)** Awarded by: UMK & UTHM - NCEEE • Award Name: **Anugerah Perkhidmatan Cemerlang 2009 (2010)** Awarded by: Universiti Malaysia Kelantan • Award Name: **Sijil Penghargaan (2010)** Awarded by: UMK - 1st International Conference on Natural Resources • Award Name: **Sijil Penghargaan (2010)** Awarded by: ECER & UMK - Konvensyen Keusahawanan • Award Name: **Sijil Dekan (2002)** Awarded by: Dekan UTM
WORKING EXPERIENCE(S)	• Technician | Director General 01-Jan-1993 - 31-Oct-1993 • Technician | Director General Of Environment (Kuala Lumpur) 01-Nov-1993 - 01-Jan-1998 • Technician | Director General 01-Nov-1993 - 01-Jan-1998 • Assisstant Environmental Control Officer | Director General Of Environment (Kuala Lumpur) 01-Jan-1998 - 14-Oct-2002

	• Environmental Control Officer | Director General Of Environment (Terengganu, Kelantan, Johor) 14-Oct-2002 - 01-Sep-2008
PROFESSIONAL MEMBERSHIP(S)	• LEMBAGA TEKNOLOGIS MALAYSIA | MEMBER | NATIONAL 05-Jun-2025 - 05-Jun-2026 • LEMBAGA JURUTERA MALAYSIA | MEMBER | NATIONAL 12-Nov-2003 - 12-Nov-2102

B. TEACHING-LEARNING ACTIVITIES

COURSES TAUGHT	• BKT2033 - HAZARDOUS MATERIAL MANAGEMENT • BKT3063 - WASTE MANAGEMENT AND POLLUTION PREVENTION • BKT3083 - ENVIRONEMENTAL RISK ASSESSMENT • BKT3093 - ENVIRONEMENTAL RISK ASSESMENT • BNT2113 - ENVIRONMENTAL RISK ASSESSMENT TECHNIQUE • BNT2123 - RESOURCES AND SOIL ECOSYSTEM • BPE3233 - ENVIRONMENTAL EDUCATION • BPT2093 - SOIL SCIENCE • BPT2113 - CHEMICALS IN AGRICULTURE • EKT12602 - INTRODUCTION TO ENVIRONMENTAL LAWS, POLICY AND ETHIC • EKT2063 - ENVIRONMENTAL PLANNING AND MANAGEMENT • EKT2073 - SUSTAINABLE AGRICULTURE • EKT3113 - REMEDIATION TECHNOLOGY • EKT3123 - RESEARCH PROJECT I • EKT32703 - WATER SUSTAINABILITY • EKT32903 - ENVIRONMENTAL IMPACT ASSESSMENT AND MANAGEMENT PLAN • EKT4133 - RESEARCH PROJECT II • EKT4164 - HYDROLOGY • EKT4178 - INDUSTRIAL TRAINING • FPE3223 - ENVIRONMENTAL IMPACT ASSESSMENT • FPT3163 - WATER SCIENCE

C. RESEARCH AND DEVELOPMENT

	1. Wong Hie Ling, Nur Azzulie Areff, Nur Syahirah Ismail, Sarifah Nadia Tamrin, Muhamad Azahar Abas, Aweng a/l Eh Rak. (2025-12). Assessment of pesticide handling practices and the use of personal protective equipment among rice farmers in Pasir Mas, Kelantan. , Vol. 13 (2) , pp. 319 - 325. https://doi.org/10.47253/jtrss.v13i2.1943 2. Abdullah, N.N., Aweng Eh Rak. (2025-01-31). Assessment of The Potential Health Risks Associated with the Plumbum, Cadmium, Zinc, and Nickel Content in Fish Tissue Collected from Retention Pond. Jurnal Kesehatan Lingkungan , Vol. 17 (1) , pp. 77 - 84. https://doi.org/10.20473/jkl.v17i1.2025.77-84 3. Abdullah M.A., Nazir M.S., Hussein H.A., Shah S.M.U., Azra N., Iftikhar R., Iqbal M.S., Qamar Z., Ahmad Z., Afzaal M., Om A.D., Shaharah M.I., Aweng Eh Rak, Hung Y.-T.. (2024). New perspectives on biomass conversion and circular economy based on Integrated Algal-Oil Palm Biorefinery framework for sustainable energy and bioproducts co-generation. Industrial Crops and Products , Vol. 213 . https://doi.org/10.1016/j.indcrop. 2024.118452 4. Nek Adek, N. B., Awang, A., Zulkeflee, N. H., Ismail, N. A., Hamzah, Z, Rak, A.E., Karim, M.F.A., Amaludin, N. A.. (2023). Distribution and Diversity of Family Rubiaceae in Pulau Banding, Gerik, Perak. , Vol. 73 . https://doi.org/10. 1051/bioconf/20237301014 5. Parveen, S, Bhat, IU, Khanam, Z, Rak, A.E., Yusoff, HM, Akhter, MS. (2022-08). Phytoremediation: In situ Alternative for Pollutant Removal from Contaminated Natural Media: A Brief Review. Biointerface Research in Applied Chemistry , Vol. 12(4) , pp. 4945 - 4960. https://doi.org/10.33263/BRIAC124.49454960 6. Nur-E-alam, Md., Salam, Mohammed Abdus, Dewanjee, Sanchita, Hasan, Md. Foysal, Rahman, Hafizur, Aweng Eh Rak, Islam, Abu Reza Md. Towfiqul, Miah, Md. Yunus. (2022-05). Distribution, Concentration, and Ecological Risk Assessment of Trace Metals in Surface Sediment of a Tropical Bangladeshi Urban River. Sustainability (Switzerland) , Vol. 14 (9) . https://doi.org/10.3390/su14095033 7. Rak, A.E., Kari, ZA, Ramli, MZ, Hasnita, C.H., Sukri S.A.M., Khalid, HNM, Abdullah, F, Dawood, MAO, Wee, W, Lee, S.W.. (2022-04). The impact of water quality on the Asian clam, Corbicula fluminea, distribution in Pergau Lake, Kelantan, Malaysia. SAUDI JOURNAL OF BIOLOGICAL SCIENCES , Vol. 29 (4) , pp. 2348 - 2354. https://doi.org/10.1016/j.sjbs.2021.12.008 8. Nor, M.M., Wan Salahuddin, W.S., Liew J.Y., Rahman M M, Abu Bakar, T.H.S.T., Appalasamy, S., Aweng, E.R., Abdul Halim, I. H., Saidan, N.H., Mohd Rosdi M.A.. (2022-02). Valorisation of date seed powder (Phoenix dactylifera L.) for tenderizing properties of different types of meat. Food Research , Vol. 6(1) , pp. 106 - 113. https://doi.org/10.26656/fr.2017.6(1).084 9. Aweng Eh Rak, Syuhadah S.N., Muchtar A.B.A., Salam M.A., Aisyah S.O.S., Azlan A., Rohanif M.A.M., Liyana, A. A.. (2022). Metals content in spiny amaranth (Amaranthus spinosus) growing wild at domestic waste open burning site. Malayan Nature Journal , Vol. 74 (1) , pp. 57 - 60. 10. Salam, MA, Dayal, SR, Siddiqua, SA, Muhib, MI, Bhowmik, S, Kabir, MM, Rak, A.E., Srzednicki, G. (2021-10). Risk assessment of heavy metals in marine fish and seafood from Kedah and Selangor coastal regions of Malaysia: a high-risk health concern for consumers. ENVIRONMENTAL SCIENCE AND POLLUTION RESEARCH , Vol. 28(30) , pp. 55166-55175. https://doi.org/10.1007/s11356-021-14701-z 11. Khan, MMA, Raj, K, Rak, A.E., Mansor H.E., Mostapa, R, Samuding, K, Shah, ZA. (2021-08). Stable isotope evidence on mechanisms and sources of groundwater recharge in quaternary aquifers of Kelantan, Malaysia. Arabian Journal of Geosciences , Vol. 14(16) . https://doi.org/10.1007/s12517-021-07646-7

JOURNAL(S)	12. Yaacob M.R., Hamzah, Z, Rak, A.E., Zakaria M.N., Ismail,M, Merican R., Nuh R., Hassan F., Khalique M.. (2021-08). ¿ETAK SALAI¿, THE HERITAGE FOOD OF KELANTAN-CONSUMERS' CONSUMPTION AND BUYING BEHAVIOURS. Academy of Entrepreneurship Journal , Vol. 27(4) , pp. 1-9. 13. Hasan, MF, Nur-E-Alam, M, Salam, MA, Rahman, H, Paul, SC, Rak, A.E., Ambade, B, Islam, AMT. (2021-06). Health Risk and Water Quality Assessment of Surface Water in an Urban River of Bangladesh. SUSTAINABILITY , Vol. 13(12) . https://doi.org/10.3390/su13126832 14. Shahriar, S.A., Kayes, I., Hasan, K., Islam, R., Awang, N.R., Hamzah, Z, Rak, A.E., Salam, M.A.. (2021). Potential of arima-ann, arima-svm, dt and catboost for atmospheric pm2.5 forecasting in bangladesh. Atmosphere , Vol. 12 (1) , pp. 1-21. https://doi.org/10.3390/atmos12010100 15. Mohammed Abdus Salam, Shujit Chandra Paul, Farah Nashara Binti Ab Rahman, Muhammad Anwar Iqbal, Sadia Afrin Siddiqua, Aweng A.l. Eh Rak, Rozita Binti Ahmad, Wan Rashidah A Kadir. (2021). Trace Metals Concentration and Associated Risk Assessment in Sediment of Kelantan Coastline Area Estuaries, Malaysia.. Soil and Sediment Contamination , Vol. 30(4) , pp. 477-496. https://doi.org/10.1080/15320383.2020.1867503 16. Rak, A.E., Nasir, S.N.A.M., Nor, M.M., Han, D.K., Appalasamy, S., Abdullah, F., Ghazi, R.M.. (2020-07). Proximate analysis and fatty acid of Corbicula fluminea (C. fluminea) tissue in Kelantan, Malaysia. Environmental Science and Pollution Research , Vol. 27(20) , pp. 24772-24785. https://doi.org/10.1007/s11356-020-07923-0 17. Han, DK, Appalasamy, S., Nasir, SNAM, Abdullah, F., Nor, MM, Rak, A.E.. (2020). High quality of bacterial dna extraction from Corbicula fluminea (Muller, 1774) tissue in Kelantan. MALAYSIAN JOURNAL OF FUNDAMENTAL AND APPLIED SCIENCES , Vol. 16(2) , pp. 161-165. 18. Rak, A.E., Appalasamy, S., Han, D.K., Md Nasir, S.N.A., Zaki, B.Z.. (2020). Determination of bacteria in Corbicula fluminea tissue using 16S rRNA gene sequences. Journal of Environmental Engineering and Science , Vol. 16(1) , pp. 30-39. https://doi.org/10.1680/jenes.20.00011 19. Ahmad, A.K., Nur-Hazwani, M.N.R., Omar, S.A.S., Rak Aweng, E., Taweel, A.. (2020). Preliminary study on invasive fish species diffusion in selected malaysian freshwater ecosystems. Pakistan Journal of Biological Sciences , Vol. 23 (11) , pp. 1374-1379. https://doi.org/10.3923/pjbs.2020.1374.1379 20. Salam, M.A., Paul, S.C., Mohamad Zain, R.A.M., Bhowmik, S., Nath, M.R., Siddiqua, S.A., Aka, T.D., Iqbal, M.A., Kadir, W.R., Ahamad, R.B., Khaleque, M.A., Rak, A.E., Amin M.F.M.. (2020). Trace metals contamination potential and health risk assessment of commonly consumed fish of Perak River, Malaysia. PLoS ONE , Vol. 15 (10) . https://doi.org/10.1371/journal.pone.0241320 21. Rak, A.E., Nurul Inani, R., Arham Muchtar, A.B., M.A. Salam, Sharifah Aisyah S.O., Liyana, A.A., Mazlan, M.. (2020). Determination of Selected Heavy Metal Contents in Fresh and Smoked Corbicula Fluminea (Muller, 1774) Collected from Hawkers in the District of Tumpat, Kelantan, Malaysia Running Head: Heavy Metal Content in C. fluminea Tumpat¿s Hawkers. International Journal of Advanced Science and Technology , Vol. 29(4s) , pp. 3463-3471. 22. Mohd Zharif Ramli, Aweng a/l Eh Rak, Lee Seong Wei. (2025-12). Reproductive Characteristics and Gonadal Development of Asian Clam (Corbicula fluminea) Broodstocks in Recirculating Aquaculture System (RAS). Asian Fisheries Science , Vol. 38 , pp. 256-265. https://doi.org/10.33997/j.afs.2025.38.4.005 23. Mohd Syakir Sulaiman, Wani Sofia Udin, Aweng Eh Rak. (2023). Petrographic Analysis of Bentong-Raub Suture Rock Types in Batu Melintang, Kelantan. Borneo Journal of Sciences and Technology (BJoST) , Vol. 5(1) , pp. 101-108. https://doi.org/10.35370/bjost.2023.5.1-12 24. Zharif Ramli, Aweng Eh Rak, Lee Seong Wei. (2022-08). Phenotypic and genotypic analysis of Asian clam, Corbicula fluminea Megerle von Muhlfeld, 1811 (Venerida, Cyrenidae) in Kelantan, Malayia. Agriculture Report , Vol. 1(2) , pp. 12-24. 25. Mohd Zharif Ramli, Dee Koh Han, Faizuan Abdullah, Aweng Eh Rak, Lee Seong Wei. (2022-04). The larval development of the Asian clam, Corbicula fluminea in the hatchery. Agriculture Report , Vol. 1(1) , pp. 28-38. 26. Mohd Zharif Ramli, Dee Koh Han, Faizuan Abdullah, Aweng Eh Rak, Lee Seong Wei. (2022-04). First record of biological invasion stages of Asian clam Corbicula fluminea (Muller, 1774) in the Lake Pergau, Kelantan, Malayia. Agriculture Report , Vol. 1(1) , pp. 39-44. 27. Mohd Zaim Mohd Zaki, Tengku Fauzan Tengku Anuar, Hana Yazmeen Hapiz, Aweng a/l Eh Rak, Zulkifli Ab Rahim. (2021-09). Kesan Mengokok Kepada Postur Ergonomics: Kajian Kes Pengokok Etak Warisan Di Kelantan, Malaysia. International Journal of Creative Future and Heritage (TENIAT) , Vol. 9(2) , pp. 128. https://doi.org/10.47252/teniat.v9i2.741 28. Mohd Syakir Sulaiman, Wani Sofia Udin, Aweng A/l Eh Rak. (2021-01). Gold Potential and Structural Analysis of Bedrock Depth for Sustainable Mining in Batu Melintang, Kelantan. Borneo Journal of Sciences & Technology , Vol. 3(1) , pp. 34 - 42. https://doi.org/10.3570/bjost.2021.3.1-06 29. Mohd Hafiz Mani Shareef, Shahrul Irdina, Yusof Akrimah, Aweng Eh Rak, Wee Wendy, Lee, Seong Wei. (2021). Develop a depuration system to control bacteria colonized in Asian clam, Corbicula fluminea tissue. International Journal of Aquatic Science , Vol. 12 , pp. 9 - 13.
	1. Norlaila Liyana Ab Wahab, Mohd Zharif Ramli, Norhazlini Mad Zin, Aweng Eh Rak. (2024-10-15). Diversity Analysis of Asian Clam Collected from Selected Rivers in Kelantan. In BIO Web of Conferences . EDP Sciences. https://doi.org/10.1051/bioconf/202413101001 2. Aweng, E.R., Rafi Y.M., Nazri, Z. Mohd, Zulhazman, H, Ismail,M, Merican A.R.M.R., Farizan, M.R. Wan Siti, Zamzani, I. Mohamad, Aisyah, S.O. Sharifah, Azizan, Ahamad Tarmizi, Wei L.S., Salam M.A. (2024). Asian Clam (Corbicula fluminea) Consumption in Thailand, Indonesia and Indochina. In 9th International Conference on Advanced Material Engineering and Technology, ICAMET 2021 . American Institute of Physics. https://doi.org/10.1063/5.0181824 3. Zafirah Z.B., Salam M.A., Daliman, S., Lee, S.W., Azlan A., Hamzah, Z, Amizi A.M., Zul Ariff, A.L, Aweng, E.R.. (2023). Proximate analysis of smoked etak (Corbicula flueminea) tissue. In AIP Conference Proceedings . American Institute of Physics Inc.. https://doi.org/10.1063/5.0117697 4. Aweng, E.R., Muchtar A.B.A., Sukree H.S, Salam M.A., Aisyah S.O.S., Azlan A., Hamzah, Z, Amizi A.M., Zul Ariff, A.L. (2023). Preliminary survey of the distribution of Corbicula fluminea (Muller, 1774) in Thailand. In AIP Conference Proceedings . American Institute of Physics Inc.. https://doi.org/10.1063/5.0117696 5. Aweng Eh Rak, Salam M.A., Aisyah S.O.S., Zamzani I.M.. (2023). Effectiveness of invented squirrels repellent using traditional knowledge in coconut farm. In AIP Conference Proceedings . American Institute of Physics Inc.. https://doi.org/10.1063/5.0117695 6. A Eh Rak, Omar, S.A.S., Salam, M.A., Baharuddin, M.I.. (2023). Determination of the Relationship Between River Ecosystems and Benthic Macroinvertebrate Ecological Indices as a Basis for River Health Assessment. In Lecture Notes in Civil Engineering , pp. 307 - 317. Springer Science and Business Media Deutschland GmbH. https://doi.org/10.1007/978-981-19-5947-9_26

PROCEEDING(S)	7. Mohd Rafi Yaacob, Zulhazman Hamzah, Mohd Nazri Zakaria, Aweng Eh Rak, Rooshihan Merican Abdul Rahim Merican. (2023). Asiatic Clam (Etak) in Cambodia: An Exploratory Study of Social Economy and Business Activities. In InCEBT: International Conference on Entrepreneurship, Business and Technology , pp. 549¿558. Springer Singapore. https://doi.org/10.1007/978-981-99-2337-3_47 8. Awang, A, Zulkeflee, N. H., Nek Adek, N. B., Hamzah, Z, Rak, A.E., Karim, M.F.A., Amaludin, N. A.. (2023). Composition and Diversity of Tree Species with DBH of 5 cm and above at Pulau Banding, Gerik, Perak, Malaysia. In BIO Web of Conferences . EDP Sciences. https://doi.org/10.1051/bioconf/20237301001 9. Nursalwani M., Amizi A.M., Aweng, E.R., Hamzah, Z, Sannasi A.P., Zul Ariff, A.L. (2023). Young entrepreneurs participation in halal food products: A conceptual paper. In AIP Conference Proceedings . American Institute of Physics Inc.. https://doi.org/10.1063/5.0118108 10. Ghazi M., Aweng, E.R., Farhana N.. (2023). Assessing the implementation of non revenue water (NRW) management efficiency based on economic indicators: Case of Bechah Tendong, Kelantan, Malaysia. In AIP Conference Proceedings . American Institute of Physics Inc.. https://doi.org/10.1063/5.0117268 11. Ariff A.L.Z, Amizi A.M., Aweng, E.R., Zulhazman, H, Sannasi A.P., Nursalwani M.. (2023). Consumer attitude towards Halal integrity on Halal food supply chain product. In AIP Conference Proceedings . American Institute of Physics Inc.. https://doi.org/10.1063/5.0118107 12. Zul Ariff, A.L, Amizi A.M., Hamzah, Z, Aweng, E.R., Nursalwani M.. (2023). Perception of fish farmers towards halal products on animal feed. In AIP Conference Proceedings . American Institute of Physics Inc.. https://doi.org/10.1063/5.0118110 13. Aweng, E.R., Aisyah, S.O.S, Salam, M.A., Liyana, A.A., Mior, I.B.. (2022). Interaction of Various Ecological Factors on Benthic Macroinvertebrate and River Health. In IOP Conference Series: Earth and Environmental Science . Institute of Physics. https://doi.org/10.1088/1755-1315/1102/1/012045 14. Aida, M.Z., Aisyah, S.O.S, Zamzani, I.M., Salam, M.A., Liyana, A.A., Aweng Eh Rak. (2022). Benthic Macroinvertebrates Assemblages in the Fish Pond. In IOP Conference Series: Earth and Environmental Science . Institute of Physics. https://doi.org/10.1088/1755-1315/1102/1/012063 15. Rak, A.E., Sirajudin M.S., Omar S.A.S., Salam M.A., Ahmad A.. (2022). Energy content based on oil palm fronds' potions and particle size. In AIP Conference Proceedings . American Institute of Physics Inc.. https://doi.org/10.1063/5.0078498 16. Merican A.R.M.R., Yaacob M.R., Hamzah, Z, Rak, A.E., Zakaria M.N., Ismail,M, Widiastuti W., Hassan F.. (2022). The Demography and Business Profiles of Etak Salai Women Vendors in Kelantan, Malaysia. In Lecture Notes in Networks and Systems , pp. 649 - 659. Springer Science and Business Media Deutschland GmbH. https://doi.org/10.1007/978-3-031-08087-6_46 17. Ibrahim, Mohamad Azahar, Omar, Sharifah Aisyah Syed, Salam, Mohammed Abdus, Ahmad, Azlan, Daliman S., Rak Aweng, E.. (2022). Proximate properties analysis of pellet material made from Leucaena leucocephala and Acacia mangium. In AIP Conference Proceedings . American Institute of Physics Inc.. https://doi.org/10.1063/5.0078499 18. Kamal Z.A., Khan, MMA, Amin M., Mansor H.E., Shafiee N.S., A/l Eh rak, Amin M.F.M., Hamzah Z., Shah Z.A.. (2022). Assessment of groundwater quality in the coastal aquifers of Bachok using hydrogeochemical analysis. In AIP Conference Proceedings . American Institute of Physics Inc.. https://doi.org/10.1063/5.0078689 19. Aweng, E.R., Sharifah Aisyah S.O., Salam M.A., Mior I.B.. (2021-09). Correlation between physico-chemical water quality and river ecosystems in Malaysia rivers with different land uses. 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Sharizal S.M., Salam M.A., Aisyah S.O.S., Zamzani I.M., Ariff A.L.Z, Aweng, E.R.. (2021-07). Effect of portions and particle sizes on ultimate properties of oil palm fronds. In AIP Conference Proceedings , pp. 1 - 10. American Institute of Physics Inc.. https://doi.org/10.1063/5.0051560 26. Ismail,M, Rafi Y.M., Zulhazman, H, Nazri Z.M., Merican A.R.M.R., Aweng, E.R., Ariff A.L.Z, Farizan M.R.W.S.. (2021-07). Towards developing economic community development and sustainability model of the Asian clam (Etok) industry in Kelantan, Malaysia. In AIP Conference Proceedings , pp. 1 - 7. American Institute of Physics Inc.. https://doi.org/10.1063/5.0052684 27. Zulhazman, H, Aweng, E.R., Mohamad Faiz M.A., Muhamad Azahar A., Kamarul Ariffin Hambali, Nor Hizami H., Muhammad Firdaus A. K., Fiffy H.S., Norhazlini M.Z., Norzielawati S.. (2021-05). Diversity and ecology of araceae in the water catchment area of Ulu Sat, Kelantan, Peninsular Malaysia. 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In International Conference on Science and Technology 2020, ICoST 2020 . IOP Publishing Ltd. https://doi.org/10.1088/1755-1315/596/1/012070 31. Sirrajudin, M.S., Salam, M.A., Ahmad, A.B., Rak, A.E., Mohamad, M.. (2020-12-28). Effect of Portions and Particle Sizes on Proximate Properties of Oil Palm Fronds. In International Conference on Science and Technology 2020, ICoST 2020 . IOP Publishing Ltd. https://doi.org/10.1088/1755-1315/596/1/012019

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BOOK(S)	1. Aweng-Eh Rak, Karunakaran Tharmadurai, A. Latiff. (2023). Plants in Herbal Rice. Penerbit UMK. 2. Aweng A/L Eh Rak. (2021). Kelestarian: Amalan Baik. UMK Publisher.
CHAPTER(S)	1. Sharifah Aisyah Syed Omar, Aweng A/L Eh Rak, Ahmad Abas Kutty. (2023). Chapter 5 Water Quality Analysis Macroinvertebrates In Water. In Handbook of: Basic Materials for Environmental Analysis (pp. 67-80). Penerbit UMK.
OTHER(S)	1. Aweng Eh Rak. (2026-08). Sejauh Manakah Suhu Salai Mempengaruhi Nutrisi Etak?. MScience Ent.. 2. Aweng a/l Eh Rak. (2026-05). Keupayaan Rawatan Semulajadi Hasil Pelepasan Air Sisa Loji Rawatan Air KUmbahan: Kajian Kes di Sungai Buluh, Jeli, Kelantan. MScience Ent.. 3. Nazahatul Anis Amaludin, Zulhazman Hamzah, Aweng Eh Rak, Muhammad Najmi Mohd Masri, Noor Janatun Naim Jemali, Nur Kyariatul Syafinie Abdul Majid, Mohd Sukhairi Mat Rasat. (2025-12). An environmental education approach to nurture beach cleaning habits among Nature School Clubs. Umk Press. 4. AL Eh Rak. (2025-08). Potensi Rumput Menderong, Kerak Kecil dan Purun Sebagai Agen Fitoremediasi Rawatan Air Kolam Tadahan. MScience Ent.. 5. Aweng Eh Rak. (2025-03-17). Tinjauan Awal Jenis-jenis Tumbuhan Herba Kawasan Tanah Lembap. 6. Aweng Eh Rak. (2024-09-25). Potensi Herba Jenis Umbisi Mencegah Kanser. MScience Ent.. 7. Aweng Eh Rak. (2024-09). UMK Pusat Pembiakbakaan Durian. Agro Publication. 8. Norhazlini Mat Zain, Aweng A/L Eh Rak, Nor Hizami Hassin, Zulhazman Hamzah, Muhamad Azahar Abas, Muhammad Firdaus Abdul Karim. (2023-12-27). Pulau Herba: Laboratorium Alam Terbuka untuk Pendidikan dan Pelancongan. Majalah Sains. 9. Aweng Eh Rak. (2023-11-08). Sayuran dan Ulaman Tradisional Orang Asli Jahai. Dewan Bahasa dan Pustaka (DBP). 10. Aweng Eh Rak. (2023). Lembah Ladang Makanan Jeli (Jeli Food Farm Valley - JFFV) : Tanaman Selingan antara Mesta dan Lada Solok. Agro Publication. 11. Aweng Eh Rak. (2022-09-18). Etak Salai: Kandungan Nutrisi Makanan. 12. Aweng Eh Rak. (2022-08). Pengetahuan TRadisional Untuk Menghalau Tupai. MARDI. 13. Mohd Zharif Ramli, Aweng Eh Rak, Lee, Seong Wei. (2021-09). Compact Recirculating Aquaculture System (CORALS): Asian Clam Saviour. UMK Publication. 14. Marieanne Christie Leong, Aweng Eh Rak, Appalasamy, Suganthi, Amal Najihah Muhamad Nor, Nur Aqilah Azmi, Vijaya Kumaran, Jayaraj, Wong Hie Ling, Muhammad Firdaus Abdul Karim, Robin Sebolino. (2021-09). Fuelling Future Treasure: Community Based E-Waste Recycling Model. UMK Publication. 15. Shaparas Daliman, Nur Ain Najwa Mohd Adib, Nazahatul Anis Amaludin, Noor Janatun Naim Jemali, Aweng Eh Rak, Nordiana Abd Aziz. (2021-09). Smart Fertilization Management for Oil Palm Tree Based on IOT and Deep Learning.. UMK Publication. 16. Roslanzairi Mostapa, Kamarudin Samuding, Mohammad Muqtada Ali Khan, Zakiyah Ainul Kamal, Hafzan Eva Mansor, Nor Shahida Shafiee @ Ismail, Aweng a/l Eh Rak. (2021-09). Customized Rainfall Collector for Isotope Analysis. UMK Publication. 17. Aweng A/L Eh Rak. (2021-09). Ekstrak Daun Ketumbit Antibakteria Etak Salai. Dewan Bahasa dan Pustaka (DBP).

	18. Aweng A/L Eh Rak. (2021-04). Kelestarian Ekonomi Masyarakat di Kelantan. Dewan Bahasa dan Pustaka (DBP). 19. AL Eh Rak. (2021-04). Inovasi Pengusaha Kolam Udang Mencipta Alat Pengukur Kekeruhan Air. Academy Science. 20. Aweng A/L Eh Rak. (2021-01). Serai Kawal Kelodakan Sungai. Dewan Bahasa dan Pustaka (DBP). 21. Aweng A/L Eh Rak. (2020-12). Rumput Napier Bukan Sekadar Makanan Ternakan. 22. SULAIMAN, MOHD SYAKIR, Wani Sofia Udin, Aweng A/l Eh Rak. (2020-12). Shear joints and its relations with subsurface structures in Batu Melintang, Jeli, Kelantan, Malaysia. UMK Publisher. 23. Hadiana Hadiana, Aweng Eh Rak, Lee, Seong Wei, Mohd Zharif Ramli. (2020-09). Asian Clam (Corbicula fluminea) Larvae Production in Broodstock Conditioning. https://doi.org/10.20473/jafh.v9i3.16497 24. Mohd Zharif Ramli, Vinothiran Ayyapan, Akrimah Yusoff, Aweng Eh Rak, Seong Wei Lee. (2020-06). Phenotype and genotype characterisation of the asian clam of the genus corbicula megerle von mÏ¿hlfeld, 1811 (venerida, cyrenidae) from the east coast of peninsular. UNIMAS publisher. https://doi.org/10.33736/bjrst.2211.2020 25. Nandita Mitra, Shihab Ahmad Shahriar, Nurunnaher Lovely, Md Shohel Khan, Aweng Eh Rak, S. P. Kar, Md Abdul Khaleque, Mohamad Faiz Mohd Amin, Imrul Kayes, Mohammed Abdus Salam. (2020-04-30). Assessing Energy-Based CO2 Emission and Workers¿ Health Risks at the Shipbreaking Industries in Bangladesh. MDPI AG. https://doi.org/10.3390/environments7050035 26. Aweng Eh Rak, Lim, J.H., Arham Muchtar, A.B., Sharifah Aisyah, S.O., M.A. Salam, Liyana, A.A.. (2020). Concentration of Heavy Metal in Selected Vegetables Sold in Pasar Siti Khadijah, Kota Bharu, Kelantan, Malaysia. PennWell Publishing Co.. 27. A Eh Rak, Chong, K.K., Arham Muchtar, A.B., Sharifah Aisyah, S.O., Liyana, A.A., Mohamad, Mazlan. (2020). Determination of Selected Heavy Metals Concentration in Soil along the East-West Highway Road Shoulder in front of UMK Jeli Campus, Jeli, Kelantan, Malaysia. Science and Engineering Research Support Society.
RESEARCH(S)	1. A FUNDAMENTAL RESEARCH TOWARD DEVELOPING A FRAMEWORK ON MOBILE CLOUD APPLICATION RETAILS MANAGEMENT FOR TEXTILE CYBERPRENEURS | MEMBER | FRGS | 2015 2. A GREEN MODEL FOR COTTAGE INDUSTRY IN MALAYSIA - THE CASE OF BATIK INDUSTRY | HEAD | FRGS | 2014 3. ANALISIS STRUKTUR KUBU PEPERANGAN NEGERI KELANTAN MELALUI DATA XRD,XRF DAN SEM UNTUK TUJUAN KONSERVASI | MEMBER | UMK-FUND | 2020 4. CORRELATION OF BIOLOGY PARAMETERS AND PHYSICO-CHEMICAL WATER QUALITY FOR RIVER MONITORING AT UPPER REACHES | HEAD | RAGS | 2013 5. CHARACTERIZATION OF RARE EARTH ELEMENT (REE) IN ION ADSORPTION CLAY AND SOIL FROM WEATHERED GRANITE IN KELANTAN USING GEOCHEMICAL AND PETROGRAPHY ANALYSES (2021). FRGS/1/2021/WAB07/UMK/02/1. CO-RESEARCHER ¿ RM 125,000.00. | MEMBER | FRGS | 2022 6. CHARACTERIZATION OF RARE EARTH ELEMENT (REE) IN ION ADSORPTION CLAY AND SOIL FROM WEATHERED GRANITE IN KELANTAN USING GEOCHEMICAL AND PETROGRAPHY ANALYSES. | MEMBER | FRGS | 2021 7. CHARACTERIZATION OF RARE EARTH ELEMENT (REE) IN ION ADSORPTION CLAY AND SOIL FROM WEATHERED GRANITE IN KELANTAN USING GEOCHEMICAL AND PETROGRAPHY ANALYSES. | MEMBER | FRGS | 2023 8. DETERMINATION OF MICROBIOLOGY AND CHEMICAL CONTAMINANT PATHWAYS OF "ETAK" FOR INNOVATIVE PROCESSING STEP TO ENSURE FOOD SAFETY | HEAD | TRGS | 2016 9. DEVELOPING A SUSTAINABLE FRY PRODUCTION AND POND MANAGEMENT ENTREPRENEURSHIP MODEL OF FRESHWATER FARMING INDUSTRY: CASE STUDY OF RED TILAPIA | MEMBER | NRGS | 2013 10. DEVELOPMENT OF PROTOTYPE FOR SMART PLANT RECOGNITION USING DRONE-BASED REMOTE SENSING | MEMBER | UMK-FUND | 2020 11. DISCERNING THE EFFECTS OF GUT MICROBIOMES ON REPRODUCTIVE PERFORMANCE AND PRODUCTIVITY OF GOATS AND THEIR OPTIMIZATION TO IMPROVE MEAT AND MILK PRODUCTION. | MEMBER | UMK-FUND | 2020 12. ENHANCED ANAEROBIC AND AEROBIC BIOGRANULATION SYSTEM FOR TREATING PALM OIL MILL EFFLUENT | MEMBER | UMK-FUND | 2020 13. HYPES- A NOVEL METHOD FOR HYGIENIC PROCESSING OF ETAK SALAI | HEAD | UMK-FUND | 2020 14. IMPACT OF SEAWATER INTRUSION ON GROUNDWATER QUALITY IN COASTAL AQUIFERS OF KELANTAN, MALAYSIA, USING HYDROGEOCHEMISTRY AND STABLE ISOTOPES | MEMBER | FRGS | 2020 15. NUTRITIONAL VALUE AND ANTIOXCIDANT CONTENT OF LOCAL HERBAL CONCOCTION COMMONLY USED IN HERBAL RICE PREPARATION | HEAD | FRGS | 2014 16. PENCIRIAN STRUKTUR BINAAN KUBU PEPERANGAN BRITISH DI NEGERI KELANTAN UNTUK TUJUAN KONSERVASI | MEMBER | UMK-FUND | 2020 17. PENGESANAN SOSIOBUDAYA MASYARAKAT SIAM KELANTAN DARI SUDUT BAHASA ASAL SIAM KELANTAN | MEMBER | FRGS | 2015 18. TREATMENT OF POLLUTED WATER BY CATALYTIC REDUCTION METHOD IN PRESENCE OF NEWLY PREPARED PD CATALYST | MEMBER | FRGS | 2015 19. UMK GROUNDWATER PROJECT: REALTIME WATER QUALITY MONITORING SYSTEM (WMS) | MEMBER | UMK-FUND | 2020 20. UMK GROUNDWATER PROJECT:GROUNDWATER POTENTIAL SOURCES IDENTIFICATION IN UMK BACHOK USING GIS APPROACH | MEMBER | UMK-FUND | 2020 21. UMK GROUNDWATER PROJECT: GROUNDWATER POTENTIAL SOURCES IDENTIFICATION IN UMK BACHOK USING GIS APPROACH | MEMBER | UMKSIR | 2020 22. UMK GROUNDWATER PROJECT: PRELIMINARY STUDY OF GROUNDWATER POTENTIAL SOURCES IDENTIFICATION. | MEMBER | UMK-FUND | 2020 23. UMK GROUNDWATER PROJECT: REALTIME WATER QUALITY MONITORING SYSTEM (WMS) | MEMBER | UMKSIR | 2020
SUPERVISION	• **CORRELATION BETWEEN CPT,MASW AND SPT TEST DATA ON TREATED SOIL (DYNAMIC COMPACTION)** | MAIN SUPERVISOR FOR A PHD'S STUDENT • **IMPACT CLIMATE CHANGE PREDICTION ON ZOOBENTHOS IN TERING BAY OF THE BATAM ISLAND** | MAIN SUPERVISOR FOR A PHD'S STUDENT

	• **THE PHYTOREMEDIATION PROCCESS WHICH USES PLANT TO GENERATE DISSOLVE OXYGEN (DO) AND TO ABSORB NUTRIENS, WHICH POSE THREAT TO POND AQUACULTURE ACTIVITIES** | MAIN SUPERVISOR FOR A PHD'S STUDENT
RESEARCH AWARD (S)	• Product Name: Smart Fertilization Management for Oil Palm Tree Based on IOT and Deep Learning Award: GOLD Role: Member Exhibition Name: Virtual Research & Innovation 2022 • Product Name: Smart Fertilization Management For Oil Palm Tree Based On Iot And Deep Learning. Award: GOLD Role: Member Exhibition Name: Research and Innovation Carnival (CRI) 2021. • Product Name: Shaparas Daliman, Saidatul Asyikin Hashim, Intan Noradybah Md Rodi, Nordiana Abd Aziz, Nazahatul Anis Amaludin and Aweng Eh Rak (2020). Drone Based Remote Sensing Images for Smart Monitoring of Oil Palm Plantation. One Gold Medal at the Perlis International Engineering Invention & Innovation Exhibition (Pi-ENVEX) 2020. Award: GOLD Role: Member Exhibition Name: Perlis International Engineering Invention & Innovation Exhibition (Pi-ENVEX) 2020 • Product Name: Shaparas Daliman, Saidatul Asyikin Hashim, Intan Noradybah Md Rodi, Nordiana Abd Aziz, Nazahatul Anis Amaludin and Aweng Eh Rak (2020). Smart Monitoring of Oil Palm Plantation Using Drone-Based Remote Sensing Images. One Gold Medal at the iCompEx 2020. Award: GOLD Role: Member Exhibition Name: iCompEx 2020 • Product Name: Fuelling Future Treasure: Community-Based E-Waste Recycling Model. Award: GOLD Role: Member Exhibition Name: Research and Innovation Carnival (CRI) 2021. • Product Name: A Novel Method for Hygienic Processing of Etak Salai (HyPES) Award: GOLD Role: HEAD Exhibition Name: ITEX 2020 • Product Name: Aweng a/l Eh Rak, Lee Seong Wei and Mohd Zharif Bin Ramli (2020). Compact Recirculating Aquaculture Systems (CORALS) for Rearing Freshwater Clam ¿ One Gold Medal.Malaysia Technology Expo (MTE) 2020. Kuala Lumpur. 20-22 February 2020. Award: GOLD Role: Member Exhibition Name: Malaysia Technology Expo (MTE) 2020 • Product Name: Silvershine Plastic Puncher Award: GOLD Role: Head Exhibition Name: InnoRenper2023 • Product Name: Customized Rainfall Collector For Isotope Analysis (2h, 18o, Tritium). Award: SILVER Role: Member Exhibition Name: Research and Innovation Carnival (CRI) 2021. • Product Name: Compact Recirculating Aquaculture System (Corals): Asian Clam Saviour. Award: SILVER Role: Member Exhibition Name: Research and Innovation Carnival (CRI) 2021. • Product Name: Ergonomic Etak Harvester: a Design Solution for User with Musculoskeletal Disorder (MSD). Award: SILVER Role: Member Exhibition Name: eCRI2020 • Product Name: A NOVEL METHOD FOR HYGIENIC PROCESSING OF ETAK SALAI (HYPES) Award: SILVER Role: HEAD Exhibition Name: BIF 2020 • Product Name: Business Model for Sustainability of Etak Salai (SOES) - The Heritage Food of Kelantan Award: SILVER Role: Member Exhibition Name: Carnival of Research and Innovation (CRI2023) • Product Name: A NOVEL METHOD FOR HYGIENIC PROCESSING OF ETAK SALAI (HYPES) Award: SILVER Role: HEAD Exhibition Name: MTE 2020 • Product Name: Social media as an e-portfolio for academic programme. One Bronze medal. TeLiC20. Award: BRONZE Role: Member Exhibition Name: TeLiC20

D. CONSULTATION

	1. APPOINMENT AS CONSULTANT FOR BIO-ECOLOGY DRAINAGE SYSTEM (BIOECODS) WATER QUALITY ANALYSIS. UMK COOPERATIVE ¿ RM 11,620.00. | MEMBER | 2020

CONSULTATION(S)	2. PROJEK INTEGRASI BELUT DAN SAWAH PADI DENGAN INDUSTRI DAN KERAJAAN NEGERI | MEMBER | 2021 3. KAJIAN SEPARUH PENGGAL RANCANGAN PENGURUSAN HUTAN 2016-2025 JABATAN PERHUTANAN NEGERI PAHANG | MEMBER | 2021 4. PROJEK KAJIAN SEPARUH PENGGAL RANCANGAN PENGURUSAN HUTAN 2016-2025 JABATAN PERHUTANAN NEGERI PAHANG | MEMBER | 2022 5. PROJEK KAJIAN SEPARUH PENGGAL RANCANGAN PENGURUSAN HUTAN 2016-2025 JABATAN PERHUTANAN NEGERI PAHANG | MEMBER | 2022

E. COMMUNITY SERVICES

COMMUNITY SERVICES	