

CURRICULUM VITAE

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

<i>Nama Penuh (Full Name)</i>	Rosfarizan Binti Mohamad		<i>Gelaran (Title):</i> Prof. Dr.
<i>No. MyKad / No. Pasport (Mykad No. / Passport No.)</i>	<i>Warganegara (Citizenship)</i> Malaysia	<i>Bangsa (Race)</i> Malay	<i>Jantina (Gender)</i> Female
<i>Jawatan (Designation)</i>	Deputy Dean (Research & Graduate Studies)	<i>Tarikh Lahir (Date of Birth)</i>	16 September 1971

<i>Alamat Semasa (Current Address)</i>	<i>Jabatan/Fakulti (Department/Faculty)</i>	<i>E-mel dan URL (E-mail Address and URL)</i>
No. 25, Jalan 6/9B, Desa Camelia, Seksyen 6, Sg. Merab Luar, 43000 Kajang, Selangor Tel: 013-2636029	Department of Bioprocess Technology, Faculty of Biotechnology & Biomolecular Sciences, Universiti Putra Malaysia, 43400 UPM Serdang, Selangor Tel: 03-894671050/Fax: 03-89467590	E-mail: farizan@upm.edu.my URL: http://www.biotech.upm.edu.my H/P: 013-2636029

B. KELAYAKAN AKADEMIK (*Academic Qualification*)

<i>Nama Sijil / Kelayakan (Certificate / Qualification obtained)</i>	<i>Nama Sekolah Institusi (Name of School / Institution)</i>	<i>Tahun (Year obtained)</i>	<i>Bidang pengkhususan (Area of Specialization)</i>
Ph.D	Universiti Putra Malaysia/Osaka University, Japan	1997 – 2000	(Fermentation Technology) Title of Thesis: Kinetics, Modelling and Scaling-up of Kojic Acid Production by <i>Aspergillus flavus</i> 44-1 using Different Carbon Sources
MSc	Universiti Putra Malaysia	1996 – 1997	(Fermentation Technology) Promoted to Ph.D Program
B.Sc	Universiti Pertanian Malaysia (at present known as Universiti Putra Malaysia)	1991 – 1995	(Biotechnology) Title of Final Year Project: Cultivation of High Concentration of Mo ⁶⁺ Reducing Bacterium
Matriculation	Universiti Pertanian Malaysia (at present known as Universiti Putra Malaysia)	1989 – 1991	(Science Biology)

C. PENGALAMAN SAINTIFIK DAN PENGKHUSUSAN (*Scientific experience and Specialisation*)

<i>Organization</i>	<i>Position</i>	<i>Start Date</i>	<i>End Date</i>	<i>Expertise</i>
UPM	Lecturer	2001	now	Fermentation Technology/Bioreactor System

D. PEKERJAAN (Employment)				
Majikan / <i>Employer</i>	Jawatan / <i>Designation</i>	Jabatan / <i>Department</i>	Tarikh lantikan / <i>Start Date</i>	Tarikh tamat / <i>Date Ended</i>
UPM	Deputy Dean	Deputy Dean (Research and Graduate Studies) Faculty of Biotechnology & Biomolecular Sciences	20 Feb 2018	19 Feb 2021
UPM	Head of Department	Bioprocess Technology Department, Faculty of Biotechnology & Biomolecular Sciences	20 Feb 2014	19 Feb 2018
UPM	Head of Laboratory	Biopolymer & Derivative, Institute of Tropical Forestry and Forest Products	1 April 2012	19 Feb 2014
UPM	Lecturer	Faculty of Biotechnology & Biomolecular Sciences	1 July 2001	16 September 2029

E. ANUGERAH DAN HADIAH (Honours and Awards) 35 Awards received since 2010
<ol style="list-style-type: none"> 1. Silver medal for research entitled "Improvement of Folate Biosynthesis by Lactic Acid Bacteria", Invention & Research Exhibition 2011, UPM Serdang. 2. Best poster award for research entitled "Optimization of Medium Formulation and Culture Conditions for Folate Production by <i>Lactobacillus plantarum</i>" at the International Symposium of Lactic Acid Bacteria 2010, UPM Serdang. 3. Silver medal for research entitled "A Method for Producing Palm-based Kojic Acid Monooleate using Solvent-Free Method" at the 24th International Invention, Innovation & Technology Exhibition (ITEX 2013), Kuala Lumpur, 9th – 11th May 2013.

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) Since 2015. –157 papers published
<ol style="list-style-type: none"> 1. Jumbri, K., Al-Haniff Rozy, M.F., Ashari, S.E., Mohamad, R., Basri, M., Fard Masoumi, H.R. Optimisation and characterisation of lipase catalysed synthesis of a kojic monooleate ester in a solvent-free system by response surface methodology (2015) PLoS ONE, 10 (12), art. no. e0144664. DOI: 10.1371/journal.pone.0144664 2. Moghaddam, A.B., Namvar, F., Moniri, M., Tahir, P.Md., Azizi, S., Mohamad, R. Nanoparticles biosynthesized by fungi and yeast: A review of their preparation, properties, and medical applications (2015) Molecules, 20 (9), pp. 16540-16565. DOI: 10.3390/molecules200916540 3. Ghorbani, P., Soltani, M., Homayouni-Tabrizi, M., Namvar, F., Azizi, S., Mohammad, R., Moghaddam, A.B. Sumac silver novel biodegradable nano-composite for bio-medical application: Antibacterial activity. (2015).Molecules, 20 (7), pp. 12946-12958. DOI: 10.3390/molecules200712946 4. Danaee, M., Farzinebrahimi, R., Kadir, M.A., Sinniah, U.R., Mohamad, R., Mat Taha, R. Effects of MeJA and SA elicitation on secondary metabolic activity, antioxidant content and callogenesis in <i>Phyllanthus pulcher</i> (2015) Revista Brasileira de Botanica, 38 (2), pp. 265-272. DOI: 10.1007/s40415-015-0140-3 5. Azizi, S., Namvar, F., Mohamad, R., Md Tahir, P., Mahdavi, M. Facile biosynthesis and characterization of palm pollen stabilized ZnO nanoparticles (2015) Materials Letters, 148, pp. 106-109. DOI: 10.1016/j.matlet.2015.02.080 6. Baharara, J., Namvar, F., Ramezani, T., Mousavi, M., Mohamad, R. Silver nanoparticles biosynthesized using <i>Achillea biebersteinii</i> flower extract: Apoptosis induction in MCF-7 cells via caspase activation and regulation of bax and bcl-2 gene expression (2015) Molecules, 20 (2), pp. 2693-2706. DOI: 10.3390/molecules20022693 7. Inthiram, A.K., Mirhosseini, H., Tan, C.P., Mohamad, R., Lai, O.M. Application of multivariate analysis for detection of crude palm oil adulteration through fatty acid composition and Triacylglycerol profile (2015) Pertanika Journal of Tropical Agricultural Science, 38 (3), pp. 389-398. 8. Ooi, M.F., Mazlan, N., Foo, H.L., Loh, T.C., Mohamad, R., Rahim, R.A., Ariff, A. Effects of carbon and nitrogen sources on bacteriocin-inhibitory activity of postbiotic metabolites produced by <i>Lactobacillus plantarum</i> I-UL4 (2015) Malaysian Journal of Microbiology, 11 (Special issue 2), pp. 176-184. 9. Amiri, A., Mohamad, R., Rahim, R.A., Illias, R.M., Namvar, F., Tan, J.S., Abbasiliasi, S. Cyclodextrin glycosyltransferase biosynthesis improvement by recombinant <i>Lactococcus lactis</i> NZ:NSP:CGT: Medium formulation and culture condition optimization (2015) Biotechnology and Biotechnological Equipment, 29 (3), pp. 555-563. DOI: 10.1080/13102818.2015.1009713 10. Namvar, F., Rahman, H.S., Mohamad, R., Azizi, S., Tahir, P.M., Chartrand, M.S., Yeap, S.K. Cytotoxic effects of biosynthesized zinc oxide nanoparticles on murine cell lines (2015) Evidence-based Complementary and Alternative Medicine, 2015, art. no. 593014. DOI: 10.1155/2015/593014 11. Namvar, F., Rahman, H.S., Mohamad, R., Rasedee, A., Yeap, S.K., Chartrand, M.S., Azizi, S., Tahir, P.M. Apoptosis induction in human leukemia cell lines by gold nanoparticles synthesized using the green biosynthetic approach (2015) Journal of Nanomaterials, 2015, art. no. 642621. DOI: 10.1155/2015/642621

12. Abdulla, N.R., Loh, T.C., Akit, H., Sazili, A.Q., Foo, H.L., **Mohamad, R.**, Abdul Rahim, R., Ebrahimi, M., Sabow, A.B. Fatty acid profile, cholesterol and oxidative status in broiler chicken breast muscle fed different dietary oil sources and calcium levels (2015) *South African Journal of Animal Sciences*, 45 (2), pp. 153-163. DOI: 10.4314/sajas.v45i2.6
13. Kamarullah, S.H., Mydin, M.M., Omar, W.S.A.W., Hariith, S.S., Noor, B.H.M., Alias, N.Z.A., Manap, S., **Mohamad, R.** Surface morphology and chemical composition of napier grass fibers [Morfologi Permukaan dan Komposisi Kimia Gentian Rumput Napier] (2015) *Malaysian Journal of Analytical Sciences*, 19 (4), pp. 889-895.
14. Azizi, S., **Mohamad, R.**, Rahim, R.A., Moghaddam, A.B., Moniri, M., Ariff, A., Saad, W.Z., Namvar, F. ZnO-Ag core shell nanocomposite formed by green method using essential oil of wild ginger and their bactericidal and cytotoxic effects (2016) *Applied Surface Science*, 384, pp. 517-524. DOI: 10.1016/j.apsusc.2016.05.052
15. Yaacob, N.S., **Mohamad, R.**, Ahmad, S.A., Abdullah, H., Ibrahim, A.L., Ariff, A.B. The influence of different modes of bioreactor operation on the efficiency of phenol degradation by *Rhodococcus* UKMP-5M (2016) *Rendiconti Lincei*, pp. 1-12. Article in Press. DOI: 10.1007/s12210-016-0567-x
16. Azizi, S., **Mohamad, R.**, Bahadoran, A., Bayat, S., Rahim, R.A., Ariff, A., Saad, W.Z. Effect of annealing temperature on antimicrobial and structural properties of bio-synthesized zinc oxide nanoparticles using flower extract of *Anchusa italic* (2016) *Journal of Photochemistry and Photobiology B: Biology*, 161, pp. 441-449. DOI: 10.1016/j.jphotobiol.2016.06.007
17. Namvar, F., Azizi, S., Rahman, H.S., **Mohamad, R.**, Rasedee, A., Soltani, M., Rahim, R.A. Green synthesis, characterization, and anticancer activity of hyaluronan/zinc oxide nanocomposite (2016) *OncoTargets and Therapy*, 9, pp. 4549-4559. DOI: 10.2147/OTT.S95962
18. Abdulla, N.R., Loh, T.C., Akit, H., Sazili, A.Q., Foo, H.L., Kareem, K.Y., **Mohamad, R.**, Abdul Rahim, R. Effects of dietary oil sources, calcium and phosphorus levels on growth performance, carcass characteristics and bone quality of broiler chickens (2016) *Journal of Applied Animal Research*, pp. 1-7. Article in Press. DOI: 10.1080/09712119.2016.1206903
19. Namvar, F., Azizi, S., **Mohamad, R.**, Boroumand Moghaddam, A., Soltani, M., Moshfegh, F. Nanosized silver-palm pollen nanocomposite, green synthesis, characterization and antimicrobial activity (2016) *Research on Chemical Intermediates*, 42 (3), pp. 1571-1581. DOI: 10.1007/s11164-015-2103-5
20. Zahari, N.I., Shah, U.K.M., Asa'ari, A.Z.M., **Mohamad, R.** Selection of potential fungi for production of cellulase-poor xylanase from rice straw (2016) *BioResources*, 11 (1), pp. 1162-1175. DOI: 10.15376/biores.11.1.1162-1175
21. Tenesa, M., Loh, T.C., Foo, H.L., Samsudin, A.A., **Mohamad, R.** and Raha, A.R. (2016). Effects of feeding different levels of low crude protein diets with different levels of amino acids supplementation in layer hen performance. *Pertanika J. Trop. Agric. Sci.*, 39(4): 543-555.
22. Wong, L.Y., Wan Zuhainis, S., **Rosfarizan, M.** and Paridah, Md.T. (2016). Efficacy of *Aspergillus fumigatus* R6 pectinase in enzymatic retting of kenaf. *BioResources*, 11(4):10030-10041.
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24. Muhamad Nor, N., Mohamed, M.S., Loh, T.C., Foo, H.L., Rahim R.A., Tan, J.S. and **Mohamad, R.** (2017). Comparative analyses on medium optimization using one-factor-at-a-time, response surface methodology and artificial neural network for lysine-methionine biosynthesis by *Pediococcus pentosaceus* RF-1. *Biotechnology & Biotechnological Equipment*, <https://doi.org/10.1080/13102818.2017.1335177>.
25. Nawawi, M.H., **Mohamad, R.**, Md Tahir, P. and Saad, W.Z. (2017). Extracellular xylanopectinolytic enzymes by *Bacillus subtilis* AD11 from EFB's compost. *International Scholarly Research Notices*, Volume 2017, Article ID 7831954, 7 pages. <https://doi.org/10.1155/2017/7831954>.
26. Hoda, S., Masoud, H.T., Mozghan, S., Farideh, N., Susan, A., **Rosfarizan, M.** and Hanieh, S. (2017). Green synthesis of gold nanoparticles Using *Sumac* aqueous extract and their antioxidant activity. *Materials Research*. 2017; 20(1): 264-270. DOI: <http://dx.doi.org/10.1590/1980-5373-MR-2015-0694>.
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28. Wong, L.Y., Wan Zuhainis, S., **Rosfarizan, M.** and Paridah, Md.T. (2017). Optimization of cultural conditions for polygalacturonase production by a newly isolated *Aspergillus fumigatus* R6 capable of retting kenaf. *Industrial Crops and Products*. 97: 175-183.
29. Abdul Manan, M., **Mohamad, R.** and Ariff, A. (2017). The morphology and structure of red pigment producing fungus: *Monascus purpureus*. *Journal of Microbiology & Experimentation*, 5(1): 00138.
30. Shahirah, M., **Rosfarizan, M.**, Wan Zuhainis, S., Siti Suhaila, H., Marlina, M.M., Shahida, H.K., Badrul Hisham, M.N. and Wan Siti Atikah, W.O. (2017). Optimisation of Medium Composition and Culture Conditions of Filter-paperase by UPMC1106 using *Pennisetum Purpureum*. *Chemical Engineering Transactions*, 56:1735-1741.
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33. Azizi, S., Mahdavi Shahri, M. and **Mohamad, R.** (2017). Green synthesis of zinc oxide nanoparticles for enhanced adsorption of lead ions from aqueous solutions: Equilibrium, kinetic and thermodynamic studies. *Molecules*, v22, 831. doi:10.3390/molecules22060831.
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38. Kalantari, K., Moniri, M., Boroumand Moghaddam, A., Abdul Rahim, R., Ariff, A., Izadiyan, Z. and **Mohamad, R.** (2017). A review of the biomedical applications of zerumbone and the techniques for its extraction from ginger rhizomes. *Molecules*, 22, 1645; doi:10.3390/molecules22101645.
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40. Khatun, J., Loh, T.c., Akit, H., Foo, H.L. and **Mohamad, R.** (2018) Influence of different sources of oil on performance, meat quality, gut morphology, ileal digestibility and serum lipid profile in broilers, *Journal of Applied Animal Research*, 46:1, 479-485, DOI: 10.1080/09712119.2017.1337580.
41. Tang, H.C., Siew, C.C., Abdullah, N., **Mohamad, R.**, Monar, A.R., Chong, C.W., Fitrianto, A. and Ho, Y.W. (2018). Production of phytase by *Mitsuoella jalaludinii* in semi-solid state fermentation of Agricultural by-products. *Sains Malaysiana*, 47(2), 277-286.
42. Moniri, M., Moghaddam, A.B., Azizi, S., Zuhainis, W.S., Raha, A.R., Arulselvan, P. and **Mohamad, R.** (2018), Molecular study of wound healing after using biosynthesized BNC/Fe₃ nanoparticles assisted with a bioinformatics approach. *International Journal of Nanomedicine*, 13, 2955-2971.
43. Salikin, N., Md. Shah, U.K.M.S., Remli, N.A.M., Ismail, I.S.I., **Mohamad, R.**, Baharuddin, A.S. and Salsabila, K.A. (2018). Metabolomics analysis on antifungal activities produced by *Penicillin oxalicum* T3.3 grown on different types of carbon sources. *International Journal of Environmental & Agriculture Research*, 4(5): 69-78.
44. Azizi, S., & **Mohamad, R.** (2018). Mechanical and barrier properties of kappa-carrageenan/cellulose nanocrystals bio-nanocomposite films. Paper presented at the IOP Conference Series: Materials Science and Engineering, , 368(1) doi:10.1088/1757-899X/368/1/012013.
45. Ishak, N., Lajis, A. F. B., **Mohamad, R.**, Ariff, A. B., Mohamed, M. S., Halim, M., & Wasoh, H. (2018). Kinetics and optimization of lipophilic kojic acid derivative synthesis in polar aprotic solvent using lipozyme RMIM and its rheological study. *Molecules*, 23(2) doi:10.3390/molecules23020501
46. Khatun, J., Loh, T. C., Akit, H., Foo, H. L., **Mohamad, R.**, & Kareem, K. Y. (2020). Dietary supplementation with l -arginine and combinations of different oil sources beneficially regulates body fat deposition, lipogenic gene expression, growth performance and carcass yield in broiler chickens. *Animal Production Science*, 60(11), 1409-1417. doi:10.1071/AN19205.
47. Moniri, M., Moghaddam, A. B., Azizi, S., Rahim, R. A., Zuhainis, S. W., Navaderi, M., & **Mohamad, R.** (2018). In vitro molecular study of wound healing using biosynthesized bacteria nanocellulose/ silver nanocomposite assisted by bioinformatics databases. *International Journal of Nanomedicine*, 13, 5097-5112. doi:10.2147/IJN.S164573.
48. Nooh, H. M., Masomian, M., Salleh, A. B., **Mohamad, R.**, Ali, M. S. M., & Rahman, R. N. Z. R. A. (2018). Production of thermostable T1 lipase using agroindustrial waste medium formulation. *Catalysts*, 8(11) doi:10.3390/catal8110485.
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50. Lee, F. H., Wan, S. Y., Foo, H. L., Loh, T. C., **Mohamad, R.**, Rahim, R. A., & Idrus, Z. (2019). Comparative study of extracellular proteolytic, cellulolytic, and hemicellulolytic enzyme activities and biotransformation of palm kernel cake biomass by lactic acid bacteria isolated from Malaysian foods. *International Journal of Molecular Sciences*, 20(20) doi:10.3390/ijms20204979.
51. Lim, Y. H., Foo, H. L., Loh, T. C., **Mohamad, R.**, Abdul Rahim, R., & Idrus, Z. (2019). Optimized medium via statistical approach enhanced threonine production by *Pediococcus pentosaceus* TL-3 isolated from Malaysian food. *Microbial Cell Factories*, 18(1) doi:10.1186/s12934-019-1173-2.
52. Lim, Y. H., Foo, H. L., Loh, T. C., **Mohamad, R.**, & Abdullah, N. (2019). Comparative studies of versatile extracellular proteolytic activities of lactic acid bacteria and their potential for extracellular amino acid productions as feed supplements. *Journal of Animal Science and Biotechnology*, 10(1) doi:10.1186/s40104-019-0323-z.
53. Mohd Yusof, H., **Mohamad, R.**, Zaidan, U. H., & Abdul Rahman, N. A. (2019). Microbial synthesis of zinc oxide nanoparticles and their potential application as an antimicrobial agent and a feed supplement in animal industry: A review. *Journal of Animal Science and Biotechnology*, 10(1) doi:10.1186/s40104-019-0368-z.
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58. Mohd Yusof, H., **Mohamad, R.**, Zaidan, U. H., & Rahman, N. A. (2020). Sustainable microbial cell nanofactory for zinc oxide nanoparticles production by zinc-tolerant probiotic *Lactobacillus plantarum* strain TA4. *Microbial Cell Factories*, 19(1) doi:10.1186/s12934-020-1279-6.
59. Roselan, M. A., Ashari, S. E., Faujan, N. H., Mohd Faudzi, S. M., & **Mohamad, R.** (2020). An improved nanoemulsion formulation containing kojic monooleate: Optimization, characterization and in vitro studies. *Molecules (Basel, Switzerland)*, 25(11) doi:10.3390/molecules25112616.
60. Zabidi, N. A. M., Foo, H. L., Foo, H. L., Loh, T. C., Loh, T. C., **Mohamad, R.**, . . . Rahim, R. A. (2020). Enhancement of versatile extracellular cellulolytic and hemicellulolytic enzyme productions by *Lactobacillus plantarum* RI 11 isolated from Malaysian food using renewable natural polymers. *Molecules*, 25(11) doi:10.3390/molecules25112607.

H. PROJEK PENYELIDIKAN TERDAHULU (Past Research Project)					
Project No.	Project Title	Role	Year	Source of fund	Status
09-02-04-0337-EA001	Utilisation of Fed-batch Fermenter for High Density Cell Cultivation of Beneficial Bacterium (<i>Bacillus subtilis</i>) for Aquaculture Industry	Project leader	2002 – 2004	MOSTI	Completed
09-02-04-0706-EA001	Development of Fed-batch Fermentation Process for Improvement of Phytase Production by <i>Aspergillus ficuum</i>	Project leader	2003 – 2006	MOSTI	Completed
02-01-04-SF0238	Optimization and Scaling up of Enzymatic Synthesis of Kojic Acid Esters using Stirred Tank Reactor	Project leader	2007-2009	MOSTI	Completed
06-01-04-SF0239	Development of Fermentation Process for Hyaluronic Acid Production by <i>Streptococcus</i> spp using Stirred Tank Bioreactor	Project leader	2007-2009	MOSTI	Completed
RUGS 91208	Process Control Strategies for Hyaluronic Acid Production by <i>Streptococcus zooepidemicus</i> using Stirred Tank Bioreactor	Project leader	2007-2009	UPM	Completed
2-01-04-SF1019	Development of Pilot Scale Folic Acid Production by Recombinant Lactic Acid Bacteria using a Bioreactor	Project leader	2009-2012	MOSTI	Completed
09-05-MGI-GMB003	Bioprocessing Strategies and Analysis to Improve Production of Biomolecule by <i>Lactococcus lactis</i>	Sub-project leader	2009-2012	MOSTI	Completed
5450659	Development of Hyaluronan (HA) Producer harbouring has Genes from <i>Streptococcus zooepidemicus</i> and Bioprocessing Strategies for HA Synthesis	Project leader	2012-2014	MOSTI	Completed
9361400	Strategies for Enhancement of Cyclodextrin Glycosyltransferase Biosynthesis by Recombinant <i>Lactococcus lactis</i> NZ:NSP:CGT	Project leader	2012-2014	UPM	Completed
5526009	Developing Mass Production Protocol of Selected LAB, Enzymes and Treated PKC in Pilot Plants	Project leader	2012-2017	MOE	Completed
5526012	Elucidation of The Effects of Amino Acids And Proteinaceous Bioactive Compounds Produced From Agro-Wastes As Poultry Feed	Project leader	2012-2017	MOE	Completed
5527058	Isolation of Novel Lignocellulolytic Fungi for Biological Pretreatment of Wood Lignocellulose	Project leader	2012-2014	MOE	Completed
Putra Grant	Biosynthesis of Zinc Oxide (ZnO) Nanoparticles and Fermentation Strategies for Fungi Biomass Production used for Biomedical Applications	Project leader	2016 - 2017	UPM	Completed
Case Writing Grant Scheme	Case Study on Moisture and Mold Damaged Buildings: Remediation Strategy	Project leader	2016	MOE	Completed
Putra IPS Grant	Preparation of Healing-Promoting Biomaterials in a Modern Bio-Nanocellulose Wound Dressing	Project leader	2016 - 2018	UPM	Completed
Putra IPS Grant	Bioprocessing Strategies for Improvement of Bionanocellulose Production by Local Isolate using a Bioreactor System	Project leader	2018 - 2020	UPM	Completed
(INNOHUB)	Skin Pigmentation Inhibitor	Project leader	2017 - 2019	UPM	Completed
(INNOHUB)	Green Wound Dressing	Project Leader	2020-2022	UPM	In Progress
PRGS	Pre-clinical Study of Antimicrobial Wound Dressing Nanocomposites Prototypes based on Bacterial Nanocellulose and Bitter Gourd Extract of Silver Nanoparticles	Project leader	2020-2022	MOE	In Progress
Co- Researcher					
IRPA EAR	Development of Process Control for Improvement of Kojic Acid Fermentation Process by <i>Aspergillus</i> spp.		RM 194,000		1999–2001
IRPA PR	Scale up Production of Wax Ester by Enzymatic Esterification of Oleic Acid and Oleyl Alcohol in Batch Mode Bioreactor Operation		RM 518,000		2003–2006
Top-Down BCC	Production of Pullulanase and CGTase by Local Strains using Sago Starch as a Carbon Source		RM 240,000		2001–2004
Top-Down BCC	Microbial Fermentation of Palm Kernel Cake for Poultry Feed		RM 102,000		2006-2007
Science Fund	Lactic Acid Bacteria as an Approach to Vitamin Fortification		RM 212,000		2007-2009
Science Fund	Bioreactor System for Production of Thermophilic Xylanolytic Enzymes by Recombinant <i>Escherichia coli</i> DH5alpha		RM 178,800		2007-2009
Science Fund	Design of Impeller for Improvement of Oxygen Transfer in Stirred Tank Bioreactor for Shear-Sensitive Biological Systems		RM 133,800		2007-2009
Science Fund	Media Formulation and Optimisation of Culture Conditions for Bacteriocin Production by Locally Isolated Lactic Acid Bacteria		RM 198,250		2007-2009
RUGS	Bioreactor System for Production of Thermophilic Xylanolytic Enzymes by Recombinant <i>Escherichia coli</i> DH5alpha		RM 85,000		2007-2009

FRGS	Metabolic Response Analysis of Recombinant <i>Escherichia coli</i> Carrying Aerolysin Gene	RM 144,000	2007-2009
Bridging Fund	Large Scale Kojic Acid Production via High Performance fermentation Process using Locally Isolated Fungus	RM 1,411,450	2008-2010
Bridging Fund	Up-Scaling and Commercialization of Bacteriocin Produced by Lactic Acid Bacteria Isolated from Malaysian Fermented Foods	RM 3,002,000	2008-2010
FRGS	An Investigation on the Nutrition Requirements and Growth Kinetics of the Heterotrophic Culture of the Algae (<i>Tetraselmis suecica</i>) in a Closed Bioreactor System	RM126,000	2007-2009
PMI2 (Sheffield University)	Towards a Generic Methodology for the Purification and Molecular Characterization of Multi-protein Complexes Grant: Connect Research Cooperation Award Scheme	RM 271,341	2008-2010
Science Fund	Direct Bioconversion of Lignocelluloses to Biobutanol using Mixed Cultures of Thermophilic Anaerobic Bacteria	RM 139,000	2009 – 2011
Science Fund	Phytase Production from <i>Mitsuoella jalaludinii</i> as a Feed Enzyme Supplement in Poultry Industry	RM210,000	2012-2014
Science Fund	Up-scaling Production of Bacteriocin Produced by Lactic Acid Bacteria Isolated From Malaysian Fermented Foods as Feed Additive in Replacement of Antibiotics in the Diet of Broiler Chickens	RM272800	2007-2009
Science Fund	Biofloculant derived from <i>Aspergillus flavus</i> production and its application in Water and Wastewater Treatment.	RM378000	2010-2011
Science Fund	Bioconversion of Selected Essential Oils Into High Value Flavour and Fragrance Compounds For Food and Perfume Industries	RM230,400	2007-2009
Science Fund	Scale-up Studies on Enzymatic Synthesis of Flavor Esters in Solvent Free System using Stirred Tank Reactor (STR)	RM250,000	2010-2011
Science Fund	Efficient Retting of Kenaf using Microbial Enzymes	RM208,000	2012-2013
Science Fund	Bioconversion of Crude Glycerol to High Value Chemical Products	RM200,000	2011-2012
Science Fund	Characterization of Probiotic-Prebiotic Relationship between <i>Bifidobacteria Pseudocatenulatum G4</i> and Fructo-Oligosaccharides, <i>in vitro</i> .	RM 281,000	2006-2008
UNIDO (FC/RAS/09/002)	Increased Production Efficiency in Small-holder Kenaf Production Systems for Specific Industrial Application	USD202,000	2012-2014