Curriculum Vitae

Name: Fahrul Zaman Huyop
Designation: Associate Professor
Current post: Deputy Dean (Academic)
Instituition: Universiti Teknologi Malaysia
Address: Faculty of Biosciences & Medical Engineering,
Universiti Teknologi Malaysia, 81310 UTM Johor Bahru, Malaysia
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H-Index(SCOPUS): 8.0

Academic qualifications:
1. B.Sc. (Hons.) Biotechnology (United Kingdom) – 1995
2. Ph.D. in Biochemistry and Molecular Biology (United Kingdom) – 2001

Professional Membership:
1. Malaysian Society for Biochemistry and Molecular Biology (January 2005- current)
2. Malaysian Society for Molecular Biology and Biotechnology (January 2005-current)
3. Malaysian Society for Microbiology (2009-current)
3. Philippines Society for Microbiology (2007-Life member)

Visiting Professor
1. University of the Philippines Visayas (Jan-Feb 2011)
2. University of Negros Occidental – Recoletos, Philippines (Sept 2011)
3. University of Istanbul Turkey (March 2011, March 2013)
4. University of Santo Tomas, Manila, Philippines (May, 2014)
5. Universiti Brawijaya, Malang, Indonesia (August,2014-August,2015)
6. Universiti Negeri Makasar, Indonesia (2014)

Areas of Expertise
1. Microbiology & Biochemistry (Molecular Biology of Pollutant Degradation/Plant Biotechnology)

Research Projects
1. Microbial Growth on 3-chloropropionic acid, Project Leader, (2002-2003)
Short Term Research Grant RMC/UTM Vot#71874 (RM19,800)

2. Analysis of *Rhizobium sp.* Regulator Protein, Project Leader, (2003-2004)
Short Term Research Grant RMC/UTM Vot#71925 (RM19,980)

3. Investigation of growth of *Rhizobium sp*. at low concentrations of halogenated compound, Project Leader, (2003-2006) IRPA/RMC/MOSTE Vot#74190 (RM 171,200)

4. Molecular analysis of transgenic plants containing a *Rhizobial* dehalogenase gene, Project Leader (2004-2005) Short Term Research Grant RMC/UTM Vot#75154 (RM 47,000)

5. Mathematical modelling of recombination capacity of system of enzymes acting on DNA, Researcher (2004-2007), IRPA/RMC/MOSTE Vot#74259 (RM 171,200)

6. Enzymatic study of the dehalogenases involved in biodegradation of a herbicide 3-chloropropionic acid (3CP) by a novel indigenous bacteria, Project Leader, (2006-2008), MOSTI/e-Science Fund Vot#79073 (RM 106,869.00)

7. Improvement of plant regeneration system from seedling of *Impatiens balsamina* L. Project Leader, (2007-2009), MOHE/FRGS Vot#78180 (RM 71,000.00)

8. Investigation of Rhizobial dehalogenase control system in dehalogenase gene expression. Research Associate. (2007-2009), MOHE/FRGS Vot 78181 (RM13,788.80)

9. Isolation and identification of indigenous bacteria from Paddy field capable of degradation of herbicide monochloroacetate, Research associate, (2008-2010), MOHE/FRGS Vot 78307 (RM105,000.00)

10. Protein structural predictions/Functions by computational studies and site directed mutational analysis of non-stereospecific haloacid dehalogenase E (DehE) of Rhizobium sp. RC1 Project Leader, (2011-2012), MOHE/FRGS Vot 4F008/J130000.7835.4F008 (RM72,000.00)

11. Overexpression and molecular cloning of new dehalogenase gene from a novel bacteria able to degrade 3-chloropropionate (3CP) (2011-2013), Research University Grant Scheme (RUG), Project Leader, Vot Q.J130000.7135.00H34 (RM111,000.00)

12. Protein structural predictions/function by computational studies and site directed mutagenesis of stereospecific haloacid dehalogenase (DehD) of *Rhizobium* sp. RC1. (1/12/2012-31/03/2015), Research University Grant Scheme (RUG), Project Leader, Vot Q.J130000.2545.04H01 (RM112,000.00)

13. Protein structural prediction and functional analysis by computational studies and site directed mutagenesis of stereospecific haloacid dehalogenase (DehL) from Rhizobium sp. RC1 (1/12/2014-30/11/2015), Fundamental Research Grant (FRGS), Project Leader, Vot R.J130000.7845.4F611 (RM116,000.00)

14. Functional analysis of the roles of the amino acids of dehalogenase (DehE) from Rhizobium sp. RC1 by site-directed mutagenesis (1/10/2014-30/9/2015), PSAN Tier2, Project Leader, Vot Q.J130000.2645.10J65 (RM20,000.00)

Consultancy Projects
1. Waste Water Treatment Specialist: Uni-Technologies Sdn. Bhd. (UTSB) (2004) UT.CC-CONS-2.327(183)

2. The Regional Food Safety Regulators: Training and Consultancy for Food Service Industries (2004) (Vot# 63660) utm.01.12/27.10/2 jld.3(125)

3. Practical Plant & Animal Diversity/Microbial Diversity & Physiology for Open University Malaysia (Vot# 63278) 2004/ utm.01.12/27.10/2 jld.111(129)

4. Biotechnology programme Entrepreneurialship Special Traininig (BEST) PUSPATRI 2010 (Vot# 63700) utm.j.01.12/27.10/3/437/63700

International Collaborations
1. SEAFDEC: South East Asian Fisheries Development Center (Aquaculture Department-AQD), Iloilo, Philippines.
a) Development of novel diagnostic methods against emerging and re-emerging bacterial diseases in high value marine fish in Asia
b) Microbial dehalogenases isolated from fish

2. University of Santo Tomas (UST), Manila, Philippines
a) Analysis of heavy metals contamination in eukarytic systems (fungi)/environment-Joint supervision

3. University of Istanbul, Turkey:
a) Generation of herbicide-tolerant tobacco (*Nicotiana tabacum* TAPM 26) by expressing *dehalogenase E* gene via *Agrobacterium tumefaciens*-Mediated transformation system-Joint supervision.

National Collaborations
1. Malaysian Palm Oil Berhad (MPOB): Development of transgenic plant resistant to herbicide-Dalapon
2. Forest Research Institute of Malaysia (FRIM): Plant tissue culture and development of plant resistant to 2,2dichloropropionic acid (Dalapon) using *Rhizobium* sp. RC1 dehaogenase gene

Journals Reviewer

1. Proceeding for Annual Fundamental Science Seminar (2004) University Technology Malaysia
2. Proceeding Annual Fundamental Science Seminar (2006) University Technology Malaysia
3. Sains Malaysiana (2004-2014) University Kebangsaan Malaysia
4. Journal of Tropical Agriculture and Food Science (2005) Malaysian Agricultural Research & Development Institute
5. Jurnal Kejuruteraan Kimia dan Sumber Asli (2005) Universiti Teknologi Malaysia
6. Jurnal Teknologi (2007) Universiti Teknologi Malaysia
7. Journal of Oil Palm Research (2009-2014) Lembaga Sawit Malaysia (MPOB)
8. African Journal of Microbiology Research 2010-2011
9. Cancer Cell International Journal 2010
10. Journal of Clinical Pathology and Forensic Medicine 2010
11. African Journal of Agricultural Research 2010-2011
12. African Journal of Biotechnology 2010-2012
13. Pakistan Journal of Zoology 2010
14. Jurnal Malaysian Society of Applied Biology 2010
15. Biotechnology Research 2011-2012
16. Annals of Microbiology 2012
17. Bioremediation 2012
18. Malaysian Applied Biology 2014
19. Chiang Mai Journal of Science 2014
20. BMC Genomics 2014
21. Greener Journals 2014
22. Sains Malaysiana 2014
23. Biotechnology & Biotechnological Equipments 2014-2015
24. Roumanian Biotechnological Letters 2015

Member of Editorial Board

1. Jurnal Teknologi (UTM) 2011-2013
2. Biotechnology and Biotechnological Equipment (Taylor&Francis)

Award & Recognition

1. Best Fellow of the Year 2007 – College (14/15) Tun Ghafar Baba of Students' Affair & ALUMNI Universiti Teknologi Malaysia
2. Best Poster Awards (2009) Malaysian Society for Genetics
3. Academic Staff Award Universiti Teknologi Malaysia– for Excellence service for the year 2011- Awarded in 2012
4. BEST ORAL PAPER (April 23rd, 2014) Mycological Society of the Philippines- Annual Scientific Meeting. THEME: Fungi in lndustrial Biotechnology

Teaching

Undergradute

- SSB 2793 (Biology of Vertebrae)
- SSB 2123 (Botany)
- SSB 3502 (Genetics)
- SSB 4252 (Application in Plant Tissue Culture)
- SSB 3801 (Microbiology Practical)
- SSB 1801 (General Biology I Practical)
- SSB 1113 (General Biology II)
- SSB 3811 (Genetic Engineering Practical)
- SSB 3242 (Tissue Culture Technology)
- SSB 4712 (Computer Application in Biology)
- SSB 3302 (Biochemistry)
- SSB 2113 (Zoology)
- SSG 1113 (Cell Biology & Molecule)
- SSG 1173 (Cell Biochemistry and Metabolism)
- SSG 1801 (Cell Biochemistry and Metabolism Practical)
- SSG 2113 (Eukaryotic Diversity)
- SSG 2811 (Eukaryotic Diversity Practical)
- SSG 3583 (Ecology)
- SSG 1303 (Microbiology)
- SSG 1811 (Microbiology Practical)
- SQG 3212(Molecular Biotechnology)

Postgraduate

- MQB1802 Techniques In Biotechnology- Plant Tissue Culture
- MQB1352 Emerging Issues in Biotechnology
- MQB1242 Applications of Tissue Culture
- MMBT/MQT 1173 Biochemistry and Microbial Physiology

Postgraduate supervision

Number of MSc. Students: 30;
Number of PhD students: 7 (4 completed)

Publications

Scientific Journals

1. **Huyop, FZ**., D. Earls, P. Cracknell, D. Cowell (1997) The Impact of Saline Sewage In Biological Treatment of Waste water In sewage Treatment process through the use of Respirometry. Buletin Kimia (UTM) 12(2): 111-119. ISSN 0127-8711

2. **Huyop, F.Z**. and W.A. Venables (1997) Degradation of Thiophene-2-carboxylate by a presumptive *Rhodococcus* bacterium isolated from soil. Malaysian Journal of Biochemistry and Molecular Biology 2: 9-13. ISSN 1511-2616

3. **Fahrul Z. Huyop** and R.A. Cooper (2003) A potential use of Dehalogenase D (DehD) from *Rhizobium sp.* for Industrial Process. Jurnal Teknologi (UTM) 39(C):1-8. ISSN 0127-9696. SCOPUS

4. **Huyop, F.Z**., Suhailyssa Mesri and R.A. Cooper (2004) Characterisation of Haloacid Dehalogenase E (DehE) from *Rhizobium sp.* Jurnal Teknologi (C)(UTM) 40:31-42 ISSN 0127-9696. SCOPUS

5. **Fahrul Z. Huyop**, Aniqa A. Abdullah, Suhailyssa Mesri and Ronald A. Cooper (2004) Expression in *E.coli* and kinetic analysis of two rhizobial genes encoding haloalkanoic dehalogenase of opposite stereospecificity: A potential use of dehalogenase D (DehD) for industrial process. Buletin Kimia 20(1&2): 15-21. ISSN 0127-8711

6. **Fahrul Z. Huyop**, Tan Yea Yusn, Marcella Ismail, Roswanira Ab Wahab and Ronald A. Cooper (2004). Overexpression and characterisation of non-stereospecific haloacid Dehalogenase E (DehE) of *Rhizobium* sp. Asia Pacific Journal of Molecular Biology & Biotechnology 12(1&2): 15-20. ISSN 0128-7451. SCOPUS

7. Ng Hong Jing and **Fahrul Huyop** (2007) Dehalogenation of chlorinated aliphatic acid by *Rhodoccus* sp. Asia Pacific Journal of Molecular Biology and Biotechnology. 15(3):147-151. ISSN 0128-7451. SCOPUS

8.Ng Hong Jing and **Fahrul Huyop** (2007) Identification of a *Methylobacterium sp*. strain HN2006B by 16S rRNA gene analysis with the ability to degrade the Herbicide DALAPON. Borneo Science Journal. 20: 1-8. ISSN 1394-4339

9. Ng Hong Jing and **Fahrul Huyop** (2008) Degradation of 3-chloropropionate (3CP) by *Rhodococcus* sp. strain HJ1. Borneo Science Journal. 22:31-39. ISSN 1394-4339.

10. Ng Hong Jing and **Fahrul Huyop** (2008) Enzymatic dehalogenation of 2,2-dichloropropionic acid by locally isolated *Methylobacterium* sp. HJ1. Journal of Biological Sciences. 8(1):233-235. ISSN 1727-3048. SCOPUS

11. Ng Hong Jing, Aishah Mohd Taha, Rolando V. Pakingking Jr., Roswanira A.B. Wahab and **Fahrul Huyop** (2008) Dehalogenase from *Methylobacterium* sp. HJ1 induced by herbicide 2,2-dichloropropionate (Dalapon). African Journal of Microbiology Research. 2:32-36. ISSN 1996-0808. SCOPUS/WOS IF 0.539

12. **Fahrul Huyop**, Ng Hong Jing and Ronald A. Cooper (2008) Overexpression, purification and analysis of dehalogenase D of *Rhizobium* sp. Canadian Journal of Pure and Applied Sciences. 2(2):389-392. ISSN 1715-9997.

13. Siti Nurmadihah Ismail, Aishah Mohd Taha, Ng Hong Jing, Roswanira Ab. Wahab, Aidil Abdul Hamid, Rolando V. Pakingking Jr. and **Fahrul Huyop** (2008) Biodegradation of monochloroacetic acid (MCA) by a presumptive *Pseudomonas* sp. strain R1 bacterium isolated from Malaysian paddy (rice) field. Biotechnology. 7(3):481-486. ISSN 1682-296X. SCOPUS

14. Ng Hong Jing, Roswanira Ab. Wahab, Aishah Mohd Taha, Noor Aini Abdul Rashid and **Fahrul Huyop** (2008) A further characterization of 3-chloropropionic acid dehalogenase from *Rhodococcus* sp. HJ1. Research Journal of Microbiology. 3(6):482-488. ISSN 1816-4935. SCOPUS

15. Ng Hong Jing, Fatin Hanani Sulaiman, Roswanira Ab.Wahab, Rolando V. Pakingking, Noor Aini Abdul Rashid and **Fahrul Huyop** (2008) Purification and properties of a non-stereospecific dehalogenase enzyme E (DehE) from *Methylobacterium* sp. HJ1. African Journal of Microbiology Research. 2:187-191. ISSN 1996-0808. SCOPUS/WOS IF 0.539

16. **Fahrul Huyop**, Noor Aini Abdul Rashid, Roswanira Ab. Wahab and Ronald A. Cooper (2008) Purification and properties of *Rhizobial* DehL expressed in *Escherichia coli*. African Journal of Biotechnology. 7(12):1944-1949. ISSN 1684-5315. SCOPUS

17. A.M. Taha, A. Wagiran, H. Ghazali, **F. Huyop** and G.K.A. Parveez (2009). Optimization and transformation of garden Balsam, *Impatiens balsamina*, mediated by microprojectile bombardment. Biotechnology. 8(1):1-12. ISSN 1682-296X. SCOPUS.

18. A.M. Taha, A. Wagiran, H. Ghazali, **F. Huyop** and G.K.A. Parveez (2009). *In Vitro* Regeneration of Garden Balsam, *Impatiens balsamina* using cotyledons derived from seedlings. Biotechnology. 8(1):44-52. ISSN 1682-296X. SCOPUS

19. S.Thasif, S.Hamdan and **F. Huyop** (2009) Degradation of DL-2chloropropionic acid by bacterial dehalogenases that shows stereospecificity and its partial enzymatic characteristics. Biotechnology. 8(2): 264-269. ISSN 1682-296X. SCOPUS

20. Tan Yea Yusn and **Fahrul Huyop** (2009) Degradation of 3-chloropropionic acid by *E.coli* JM109 expressing dehalogenase (deh) gene used as selection marker. Biotechnology. 8(3): 385-388. ISSN 1682-296X. SCOPUS

21. Suhailysa Mesri, Roswanira Ab. Wahab and **Fahrul Huyop** (2009) Degradation of 3-chloropropionic acid by *Pseudomonas* sp. B6P isolated from a rice paddy field. Annals Microbiology. 59(3): 447-451. ISSN 1590-4261. SCOPUS/WOS IF 0.689

22. F. Suratman, **F.Huyop** and G.K.A. Parveez (2009) *Invitro* shoot regeneration of *Citrullus vulgaris* Schrad (Watermelon). Biotechnology. 8(4):393-404. ISSN 1682-296X. SCOPUS

23. Rosnita Darus, Rolando V. Pakingking Jr., Mohd Shahir Shamsir and **Fahrul Huyop** (2009) Biodegradation of Monochlorocetic acid (MCA) by a presumptive *Pseudomonas* sp. bacterium isolated from Malaysian paddy field. The Israeli Journal of aquaculture – Bamidgeh 61(3): 282. ISSN 0792-156X. SCOPUS/WOS IF 0.944

24. A.A.A. Hamid, S. Hamdan, S.H.Z. Ariffin and **F. Huyop** (2010). Molecular prediction of dehalogenase producing microorganism using 16S rDNA analysis of 2,2-dichloropropionate (Dalapon) degrading bacterium isolated from volcanic soil. Journal of Biological Sciences. 10(3):190-199. ISSN 1727-3048. SCOPUS

25. G. Kavitah, F. Taghipour, **F. Huyop** (2010) Investigation of factors in optimizing *Agrobacterium*-mediated gene transfer in *Citrullus lanatus* cv. Round Dargon. Journal of Biological Sciences. 10(3):209-216. ISSN 1727-3048. SCOPUS

26. A.A.A. Hamid, S. Hamdan, Rolando V. Pakingking and **F. Huyop** (2010) Identification of *Pseudomonas* sp. Strain S3 based on small subunit ribosomal RNA gene sequences. Biotechnology 9(1):33-40 ISSN 1682-296X. SCOPUS

27. K. Ganasan and **F. Huyop** (2010) The sensitivity of plant tissue culture and plant cell of *Citrullus lanatus* cv. Round Dragon against BASTA. International Journal of Agricultural Research 5(1): 11-18. ISSN 1816-4897. SCOPUS.

28. F. Suratman, **F.Huyop**, A. Wagiran, Z. Rahmat, H. Ghazali and G.K.A. Parveez (2010) Biolistic transformation of *Citrullus vulgaris* Schrad (water melon) Biotechnology. 9(2):119-130. ISSN 1682-296X. 1816-4897. SCOPUS.

29. K. Ganasan and **Fahrul Huyop** (2010) *In vitro* regeneration of *Citrullus lanatus* cv. Round Dragon. Journal of Biological Sciences. 10(2):131-137. ISSN 1727-3048. SCOPUS.

30. F. Suratman, **F.Huyop**, A. Wagiran, Z. Rahmat, H. Ghazali and G.K.A. Parveez (2010) Cotyledon with hypocotyls segment as an explant for the production of transgenic *Citrullus vulgaris* Schrad (Watermelon) mediated by *Agrobacterium tumefaciens*. Biotechnology. 9(2):106-118. ISSN 1682-296X. SCOPUS

31. N.H. Jing, R.Ab. Wahab, S. Hamdan and **F. Huyop** (2010) Cloning and DNA sequence analysis of the haloalkanoic permease uptake gene from *Rhizobium* sp. RC1. Biotechnology, 9(3):319-325. ISSN 1682-296X. SCOPUS.

32. P.C. Kutty, G.K.A. Parveez and **F. Huyop** (2010) An easy method for *Agrobacterium tumefaciens* –mediated gene transfer to *Nicotiana tabacum* cv. TAPM26. Journal of Biological Sciences. 10(6):480-489. ISSN 1727-3048. SCOPUS.

33. A.H. Zulkifly, D.D. Roslan, A.A.A. Hamid, S. Hamdan, **F. Huyop** (2010) Biodegradation of low concentration of monochloroacetic acid –Degrading *Bacillus* sp. TW1 isolated from Trengganu water treatment and distribution plant. Journal of Applied Sciences. 10(22):2940-2944. ISSN 1812-5654. SCOPUS.

34. M.A.W. Rohaya, S. Sahidan, Z.A. Zaidah, **H. Fahrul Zaman**, A.W. Nuraliza, Z.A. Shahrul Hisham (2010). Stability of human salivary lactate dehydrogenase in the present of ethylenediaminetetraacetic acid, glycerol and polyethylene glycol at various temperatures: preliminary study. Journal of Biological Sciences. 10(6):520-525. ISSN 1727-3048. SCOPUS.

35. **Fahrul Huyop** and Mahdieh Nemati (2010) Review: Properties of dehalogenase from *Rhizobium* sp. RC1. African Journal of Microbiology Research. 4(25): 2836-2847. ISSN 1996-0808. SCOPUS/WOS IF 0.539.

36. P.C. Kutty, G.K.A. Parveez and **F. Huyop** (2011) *Agrobacterium tumefaciens* –infection strategies for greater transgenic recovery in *Nicotiana tabacum* cv. TAPM26. International Journal of Agricultural Research 6(2):119-113. ISSN 1816-4897. SCOPUS.

37. **Fahrul Huyop** and Ronald A. Cooper (2011) Regulation of dehalogenase E(DehE) and expression of dehalogenase regulator gene (DehR) from *Rhizobium* sp. RC1 in *E.coli*. Biotechnology and Biotechnology Equipment 25(1): 2237-2242. ISSN 1310-2818. SCOPUS/WOS 0.760

38. T.H.T Abdul Hamid, A.A.A. Hamid, A.H. Zulkifly, S. Hamdan, S.H.Z. Ariffin and **F. Huyop** (2011) Purification and properties of a new dehalogenase enzyme from *Pseudomonas* sp. B6P grow in 3-chloropropionate (3CP). African Journal of Biotechnology 10(4): 610-614. ISSN 1684-5315. SCOPUS.

39. S. Amini, A.H. Zulkifly, Wong Wen-Yong and **F.Huyop** (2011) Molecular identification and characterization of a bacterium that has potential to degrade low concentration of haloalkanoic acid. Journal of Microbiology Research. 6(6):552-559. ISSN 1816-4935. SCOPUS

40. Christopher M. A. Caipang, Rolando V. Pakingking Jr., Mary Jane S. Apines-Amar, **Fahrul Huyop**, Norwell B. Bautista (2011). Development of a polymerase chain reaction (PCR) assay targeted to the DNA *J* gene of *Vibrio harveyi*, a bacterial pathogen in Asian seabass, *Lates calcarifer*. AACL Bioflux 4(4): 447-454. ISSN 1844-9166. SCOPUS.

41. Tengku Haziyamin Tengku Abdul Hamid, Azzmer Azzar Abdul Hamid and **Fahrul Huyop** (2011) A Review: on non-stereospecific haloalkanoic acid dehalogenases. African Journal of Biotechnology. 10(48): 9725-9736. ISSN 1684-5315. SCOPUS.

42. Ruzana Ab Kadir, Shahrul Hisham Zanal Ariffin, Rohaya Megat Abdul Wahab, Sahidan Senafi and **Fahrul Zaman Huyop** (2011) Differentiation potential of human suspension mononucleated peripheral blood cells. African Journal of Biotechnology. 10(52): 10756-10764. ISSN 1684-5315. SCOPUS.

43. Mashitah Md. Salim, D.D. Roslan and **Fahrul Huyop** (2011) Molecular analysis of dehalogenase gene in genomic DNA of *Bacillus megaterium* strain GS1 isolated from volcanic area Gunung Sibayak Indonesia. Journal of Biological Sciences. 11(5):394-398. ISSN 1727-3048. SCOPUS.

44. Wen-Yong Wong and **Fahrul Huyop** (2011) Characterization of a *Labrys* sp. strain Wy1 able to utilize 2,2-dichloropropionate (2,2-DCP) as sole source of carbon. African Journal of Microbiology Research. 5(20):3282-3288. ISSN 1996-0808. SCOPUS/WOS IF 0.539.

45. Damia Diyana Roslan, R.G. Gicana, R.J. Lamis and **Fahrul Huyop** (2011) Characterisation of *Bacillus* strains from volcanic area Gunung Sibayak able to degrade 2,2DCP. African Journal of Microbiology Research. 5(28): 4987-4992. ISSN 1996-0808. SCOPUS/WOS IF 0.539.

46. Vithya Amman, D.F.Basri, **Fahrul Huyop** (2011) Determination of the post-antibiotic effect (PAE) of combinations of extracts from galls of *Quercus infectoria* with vancomycin against Methicillin-Resistant *Staphylococcus aureus* (MRSA). African Journal of Biotechnology 10(79):18274-18278. ISSN 1684-5315. SCOPUS.

47. Wen-Yong Wong and **Fahrul Huyop (2012)** Molecular Identification and Characterization of Dalapon-2,2-dichloropropionate (2,2DCP)-degrading Bacteria from a Rubber Estate Agricultural area. African Journal of Microbiology Research. 6(7):1520-1526. ISSN 1996-0808. SCOPUS/WOS IF 0.539.

48. **Fahrul Huyop** and Ismaila Yada Sudi **(2012)** D- specific dehalogenases, a review. Biotechnology and Biotechnology Equipment. 26(2): 2817-2822. ISSN 1310-2818. SCOPUS/WOS IF 0.760.

49. Mohamed Orsod, Mugambwa Joseph and **Fahrul Huyop (2012)** Characterization of Exopolysaccharides Produced by *Bacillus cereus* and *Brachybacterium* sp. Isolated from Asian Sea Bass (*Lates calcarifer*). Malaysian Journal of Microbiology. 8(3): 170-174. ISSN (print): 1823-8262, ISSN (online): 2231-7538. SCOPUS.

50. Mohamed Orsod, Mugambwa Joseph, Yaseen Khashman and **Fahrul Huyop (2012)** Pathogenic bacteria in Asian sea bass (*Lates calcarifer*). Archives Des Sciences. 65(4): 1-9, ISSN 1661-464X. SCOPUS/WOS IF 0.296.

51. Mohsen Sohrabi, Hesam Kamyab, Narges Janalizadeh and **Fahrul Zaman Huyop (2012)** Bacterial Desulfurization of Organic Sulfur Compounds Exist in Fossil Fuels. Journal of Pure and Applied Microbiology. 6(2):717-729. ISSN 0973-7510. SCOPUS/WOS IF 0.065.

52. Eleanor Abel, Rolando V. Pakingking Jr., Gregoria Pagador, May Thanda Wint, **Fahrul Huyop (2012).** Characteristics of dehalogenase from bacteria isolated from the gut of pond-reared rohu (*Labeo rohita*) juveniles in Myanmar. Advances in Bioscience and Biotechnology, 3: 353-361. ISSN 2156-8456.

53. **Fahrul Huyop** and Ronald A. Cooper **(2012)** Degradation of millimolar concentration of the herbicide Dalapon (22DCP) by *Rhizobium* sp. isolated from soil. Biotechnology and Biotechnology Equipment 26(4): 3106-3112. ISSN 1310-2818. SCOPUS/WOS IF 0.760.

54. Eleanor Abel, Nurhafizah Ibrahim and **Fahrul Huyop (2012)** Identification of *Serratia marcescens* SE1 and determination of its Herbicide 2,2-dichloropropionate (2,2-DCP) Degradation Potential. Malaysian Journal of Microbiology. 8(4): 259-265. ISSN (print): 1823-8262, ISSN (online): 2231-7538. SCOPUS.

55. Farhad Taghipour and **Fahrul Huyop (2012).** Synthetic *bxn* Gene Utilization in the Resistance of Crops to the Herbicide Bromoxynil – A Review. Jurnal Teknologi (UTM): 59(1): 81-85. ISSN 0127–9696. SCOPUS.

56. Sudi I.Y., Wong E.L., Joyce-Tan K.H., Shamsir M.S., Jamaluddin H. and **Huyop F.** (2012) Structure Prediction, Molecular Dynamics Simulation and Docking Studies of D-Specific Dehalogenase from *Rhizobium* sp. RC1. International Journal of Molecular Sciences 13(12): 15724-15754. ISSN 1661-6596. SCOPUS/WOS 2.598.

57. Sepideh Parvizpour, Tengku Haziyamin Tengku Abdul Hamid and **Fahrul Huyop (2013).** Molecular identification and biodegradation of 3-chloropropionic acid (3CP) by filamentous fungi-*Mucor* and *Trichoderma* species isolated from UTM agricultural land. Malaysian Journal of Microbiology. 120-124 9(1): 120-124. ISSN (print): 1823-8262, ISSN (online): 2231-7538. SCOPUS.

58. Azzmer Azzar Abdul Hamid, Ee Lin Wong, Kwee Hong Joyce-Tan, Mohd Shahir Shamsir, Tengku Haziyamin Tengku Abdul Hamid and **Fahrul Huyop (2013)** Molecular Modeling and Functional Studies of the Non-Stereospecific α-Haloalkanoic Acid Dehalogenase (DehE) from Rhizobium sp. RC1 and its Association with 3-Chloropropionic acid (β-Chlorinated Aliphatic acid). Biotechnology and Biotechnological Equipment 27(2): 3725-3736. ISSN 1310-2818. SCOPUS/WOS IF 0.622.

59. Saeedeh Bagherbaigi, Ronnie G. Gicana, Robert J. Lamis, Mahdieh Nemati, **Fahrul Huyop (2013)** Characterisation of *Arthrobacter* sp. S1 that can degrade α and β-haloalkanoic acids isolated from soil contaminated area. Annals Microbiology 63(4)-1363-1370. (DOI 10.1007/s13213-012-0595-4) ISSN 1590-4261. SCOPUS/WOS IF 1.549.

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