

## CURRICULUM VITAE



Assoc. Prof. Dr. Mohd Shamsul bin Anuar  
Department of Process and Food Engineering,  
Universiti Putra Malaysia,  
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### Education

1. Ph.D. Chemical Engineering, 2009, Imperial College London
2. M.Sc. Chemical and Process Engineering, 2005, Universiti Kebangsaan Malaysia.
3. M.Eng Chemical Engineering, 2002, Imperial College London.

### Areas of Interest

1. Powder technology: compaction, flowability
2. Pharmaceutical engineering: tableting, drying, extraction, separation
3. Food engineering: food powder compaction, drying, extraction, powder properties and characterization

### Professional Qualification/ Membership/ Affiliation

1. Registered with the Board of Engineers Malaysia (BEM)
2. ACGI (Associate member of the City and Guilds Institute)
3. Graduate member of IEM

### Appointments

#### ADMINISTRATIVE POST IN UPM

Period	Position	Organisation
2018 – 2021	Deputy chairman of the departmental's social and welfare club	Department of Process and Food Engineering, UPM
2015 – 2017	Academic Coordinator I	Department of Process and Food Engineering, UPM
2014 – 2016	Head of Academic in department on fundamental process engineering subjects	Department of Process and Food Engineering, UPM
2012 – 2014	Head of Food Engineering Unit Operation Laboratory in department	Department of Process and Food Engineering, UPM
2012 – 2014	Head of Preservation and Packaging Laboratory in	Department of Process and Food Engineering, UPM

	department	
2009 – 2012	Head of Academic in department on fundamental process engineering subjects	Department of Process and Food Engineering, UPM
2010-2010	Industrial and Community Coordinator in department	Department of Process and Food Engineering, UPM
July 2009 – present	Senior lecturer	Department of Process and Food Engineering, UPM
2002 – July 2009	Tutor	Department of Process and Food Engineering, UPM

### Publications

#### Journals

#### CITATION-INDEXED JOURNALS (Scopus and ERA)

1. Intan Soraya Shamsudin, **Mohd Shamsul Anuar**, Yus Aniza Yusof, Ahmad Husni Mohd. Hanif, Suraya Mohd Tahir, Improvement in the mechanical strength of compacted urea fertilizer tablets through die wall lubrication, *Pertanika Journal of Science of Science and Technology*, vol. 27(1), 2019, p. 193-203. **(as senior and corresponding author)**
2. S. Ahmad, **M.S. Anuar**, F.S. Taip, R. Shamsudin, S.R. Abd Mutalib, Influence of process variable on integrated power-temperature drying process for rambutan seed fat yield: a case study, *Food Research*, vol. 3, 2019, p. 102-107. **(as senior and corresponding author)**
3. **M.S. Anuar**, S.M. Tahir, M.I. Najeeb, S. Ahmad, Banana (*musa acuminate*) peel drying and powder characteristics obtained through shade and microwave drying processes, *Advances in Materials and Processing Technologies*, vol. 5, 2019, p. 181-190. **(as senior and corresponding author)**
4. So'bah Ahmad, **Mohd Shamsul Anuar**, Farah Saleena Taip, Rosnah Shamsudin, Siti Roha AB Mutalib, The application of microwave drying process for rambutan (*nephelium lappaceum* L.) seed, *Journal of Microwave Power and Electromagnetic Energy*, Vol. 52, 2018, p. 142-157. **(as senior and corresponding author)**
5. N.S. Radzali, N.M. Jaafar, **M.S. Anuar**, S.M. Tahir, Compaction, mechanical strength and disintegration of palm oil empty fruit bunch (EFB) carboxymethyl cellulose (CMC) tablets, *Food Research*, vol. 2, 2018, p. 520-525. **(as senior and corresponding author)**
6. A.A. Alabi, S.M. Tahir, N.I. Zahari, M.A. Azmah Hanim & **M.S. Anuar**, A modified diametrical compression test technique (MDCTT) for mode II fracture toughness of iron powder compact, *Powder Technology*, vol. 319, 2017, p. 356-364. **(as co-author)**
7. O.J. Ojo-Kupoluyi, S.M. Tahir, M.A. Azmah Hanim, B.T.H.T. Baharudin, K.A. Matori & **M.S. Anuar**, Role of carbon addition on the microstructure and mechanical properties of cemented tungsten carbide and steel bilayer, *International Journal of Advanced Manufacturing Technology*, vol. 92, 2017, p. 3363-3371. **(as co-author)**
8. Oluwatosin Job Ojo-kupoluyi, Suraya Mohd Tahir, Mohamed Ariff Azmah Hanim, B.T. Hang Tuah Baharudin, Khamirul Amin Matori & **Mohd Shamsul Anuar**, Densification rate and interfacial adhesion of bilayer cemented tungsten carbide and steel, *International Journal of Materials Research*, Vol. 108, 2017, p. 1090-1098. **(as co-author)**

9. O.J. Ojo-Kupoluyi, S.M. Tahir, B.T.H.T. Baharudin, M.A. Azmah Hanim, **M.S. Anuar**, Mechanical properties of WC-based hardmetals bonded with iron alloys – a review, *Materials Science and Technology*, vol. 33 (5), 2017, p. 507-51. **(as co-author)**
10. Ahmad, S., **Anuar, M.S.**, Taip, F.S., Shamsuddin, R., Effect of raw material variation, process variables and device stability on drying process of rambutan (*Nephelium Lappaceum* L.) seed, *International Journal of Food Research*, vol. 23 (suppl.), 2016, p. S163-S171. **(as senior and corresponding author)**
11. Yin Hui Chow, Yee Jiun Yap, Pau Loke Show, Joon Ching Juan, **Mohd Shamsul Anuar**, Eng-Poh Ng, Chien-Wei Ooi, Tau Chuan Ling, Characterization of partitioning behaviors of immunoglobulin G in polymer-salt aqueous two-phase systems, *Journal of Bioscience and Bioengineering*, vol. 122 (5), 2016, p. 613-619. **(as senior author)**
12. F.S. Mohd Salleh, Y.A. Yusof, **M.S. Anuar**, N.L. Chin, Understanding the tableting characteristics of *Ficus Deltoidea* powder by fitting into compression models, *Journal of Food Process Engineering*, vol. 38(3), 2015, p. 250-261. **(as co-author)**
13. Yin Hui Chow, Chin Ping Tan, **Mohd Shamsul Anuar**, Bimo Ario Tejo, Pau Loke Show, Arbakariya Ariff, Eng-Poh Ng, Tau Chuan Ling. Characterization of Bovine Serum Albumin Partitioning Behaviors in Polymer-Salt Aqueous Two-Phase Systems, *Journal of Bioscience and Bioengineering*, Vol. 120 (1), 2015, p. 85-90. **(as senior author)**
14. Nurul Izzah Khalid, Norbismi Nordin, Nuraini Abdul Aziz, Norashikin Ab. Aziz, Farah Saleena Taip, **Mohd Shamsul Anuar**. Design of a Test Rig for Cleaning Studies and Evaluation of Laboratory-Scale Experiments Using Pink Guava Puree as a Fouling Deposit Model, *Journal of Food Process Engineering*, vol. 38, 2015, p. 583-593. **(as co-author)**
15. Iryane Ismail, **Mohd Shamsul Anuar**, Rosnah Shamsudin. Physical Properties of Liberica Coffee (*Coffea Liberica*) Berries and Beans, *Pertanika Journal of Science and Technology*, vol. 22(1), 2014, p. 65-79. **(as senior author)**
16. Intan Soraya Shamsuddin, **Mohd Shamsul Anuar**, Yus Aniza Yusof, Ahmad Husni Mohd Hanif, Suraya Mohd Tahir, The effect of particle size on direct compaction of urea fertilizer, *Particulate Science and Technology*, vol. 32, 2014, p. 544-553. **(as senior author)**
17. A. Shamjuddin, **M.S. Anuar**, S.M. Tahir, Characteristics of tabletted roselle (*hibiscus sabdariffa* linn.) with addition of sodium starch glycolate, *Particulate Science and Technology*, vol. 32 (4), 2014, p. 384-391. **(as senior author)**
18. Mohd Salleh, F.S., Yusof, Y.A., **Anuar, M.S.** and Chin, N.L., Flow properties of *Ficus Deltoidea* extract powder and the binders, Acdisol and Avicel. *Journal of Food Process Engineering*, vol. 37, 2014, p. 63–74. **(as co-author)**
19. Pau Loke Show, Chien Wei Ooi, **Mohd Shamsul Anuar**, Arbakariya Ariff, Yus Aniza Yusof, Soo Kien Chen, Mohamad Suffian Mohamad Annuar, Tau Chuan Ling, Recovery of lipase derived From *Burkholderia cenocepacia* ST8 using sustainable aqueous two-phase flotation composed of recycling hydrophilic organic solvent and inorganic salt, *Separation and Purification Technology*, Vol. 110, 2013, p. 112-118. **(as senior author)**
20. Yin Hui Chow, Yee Jiun Yap, **Mohd Shamsul Anuar**, Bimo Ario Tejo, Arbakariya Ariff, Pau Loke Show, Eng-Poh Ng, Tau Chuan Ling, Interfacial partitioning behaviour of bovine serum albumin in polymer-salt aqueous two-phase system, *Journal of Chromatography B*, vol. 934, 2013, pg. 71-78. **(as senior author)**

21. Ismail, I., **Anuar, M. S.**, Shamsudin, R., Effect on the physico-chemical properties of Liberica green coffee beans under ambient storage, *International Food Research Journal*, vol. 20, 2013, p. 255-264. **(as senior author)**
22. N.S. Mohamad, N. Abu Bakar, **M.S. Anuar**, S.M. Tahir, Diametrical elastic relaxation during ejection of lactose-cocoa binary tablets, *Particulate Science and Technology*, vol. 31, 2013, p. 186-189. **(as senior and corresponding author)**
23. Zahraa A. A Mousa, **M.S. Anuar**, F.S. Taip, M.C.I. Amin, S.M. Tahir, Ali Basim Mahdi, Deformation and mechanical characteristics of compacted binary mixtures of plastic (microcrystalline cellulose), elastic (sodium starch glycolate) and brittle (lactose monohydrate) pharmaceutical excipients, *Particulate Science and Technology*, vol. 31, 2013, p. 561-567. **(as senior and corresponding author)**
24. N.I. Khalid, K.W. Chan, N. Ab Aziz, F.S. Taip, **M.S. Anuar**, Concentratic tube-fouling rig for investigation of fouling deposit formation from pasteurization of viscous food liquid, *Journal of Engineering Science and Technology*, vol. 8, 2013, p. 16-26. **(as co-author)**
25. I.S. Shamsudin, **M.S. Anuar**, S.M. Tahir. Compaction of Sweet Potato (*Ipomoea Batatas* L.) and Stevia Rebaudiana Food Powders, *Particulate Science and Technology*, vol. 30, 2012, p. 136-144. **(as senior and corresponding author)**
26. Yus Aniza Yusof, Chin Nyuk Ling, **Mohd Shamsul Anuar**, Sobah Ahmad, Rohaiza Abdullah, Che Rodiziah Md. Nor, Mohammad Gulzarul Aziz, Tableting characteristics of the selected Malaysian herbs, *Journal of Medicinal Plants Research*, vol. 6, 2012, p. 5570-5581. **(as co-author)**
27. Pau Loke Show, Ching Ping Tan, **Mohd Shamsul Anuar**, Arbakariya Ariff, Yus Aniza Yusof, Soo Kien Chien, Tau Chuan Ling, Extractive fermentation for improved production and recovery of lipase derived from *Burkholderia cepacia* using a thermoseparating polymer in aqueous two-phase systems, *Bioresource Technology*, vol. 116, 2012, p. 226-233. **(as senior author)**
28. Pau Loke Show, Ching Ping Tan, **Mohd Shamsul Anuar**, Arbakariya Ariff, Yus Aniza Yusof, Soo Kien Chien, Tau Chuan Ling, Primary recovery of lipase derived from *Burkholderia cenocepacia* strain ST8 and recycling of phase components in an aqueous two-phase system, *Biochemical Engineering Journal*, vol. 60, 2012, p. 74-80. **(as senior author)**
29. Yeow S.T., Shahar A., Abdul Aziz N., **Anuar M.S.**, Yusof Y.A., Taip F.S., The influence of operational parameters and feed preparation in a convective batch ribbon powder mixer, *Drug Design, Development and Therapy*, vol. 5, 2011, p. 465-469. **(as co-author)**
30. S.N.F. Sejali, **M.S. Anuar**. Effect of drying methods on Phenolic Contents of Neem (*Azadirachta Indica*) Leaf Powder, *Journal of Herbs, Spices and Medicinal Plants*, vol. 17, 2011, p. 1-13. **(as senior and corresponding author)**
31. Pau Loke Show, Chin Ping Tan, **Mohd Shamsul Anuar**, Arbakariya Ariff, Yus Aniza Yusof, Soo Kien Chen, Tau Chuan Ling. Direct recovery of lipase derived from *Burkholderia cepacia* in recycling aqueous two-phase flotation. *Separation and Purification Technology*, vol. 80, 2011, p. 577-584. **(as senior author)**
32. S.M. Tahir, A.K. Ariffin, **M.S. Anuar**, Finite element modelling of crack propagation in metal powder compaction using Mohr-Coulomb and Elliptical Cap yield criteria, *Powder Technology*, vol. 202, 2010, p. 162-170. **(as co-author)**

33. **Anuar M.S.**, Briscoe B.J., Detrimental consequences of paracetamol tablet elastic relaxation during ejection, *Drug Development and Industrial Pharmacy*, vol. 36 (8), 2010, p. 972-979. **(as corresponding author)**
34. **Anuar M.S.**, Briscoe B.J., Interfacial elastic relaxation during the ejection of bilayered tablets, *International Journal of Pharmaceutics*, vol. 387, 2010, p. 42-47. **(as corresponding author)**
35. **Anuar M.S.**, Briscoe B.J., The elastic relaxation of starch tablets during ejection, *Powder Technology*, vol.195, 2009, p. 96-104. **(as corresponding author)**

**\*senior author = as project leader or chairman of supervisory committee (main supervisor)**

## JOURNALS INDEXED BY OTHERS

1. H'ng Sin Ying, **Mohd Shamsul Anuar**, Mohd Zuhair Mohd Nor, Drying, colour and sensory characteristics of 'Berangan' banana (musa accuminata) flesh dried using a microwave oven, *Malaysian Journal of Halal Research*, vol. 1, 2018, p. 10-14. **(senior and corresponding author)**
2. A.A. Alabi, S.M. Tahir, M.A. Azmah Hanim, N.I. Zahari, & **M.S. Anuar**, Mode I fracture toughness of copper powder compact, *Journal of Fundamental and Applied Sciences*, Vol. 10, 2018, p. 753-764. **(co-author)**
3. A. A. Alabi, S. M. Tahir, N. I. Zahari, M. A. Azmah Hanim and **M.S. Anuar**, Effect of Notching Face on Fracture Toughness of Green Metal Powder Compacts, *Global Journal of Engineering and Technology Review*, vol. 1, 2016, p. 49-56. **(co-author)**
4. **Anuar, Mohd Shamsul** and Tasirin, Siti Masrinda (2005) "Effects of Impeller Speed, Atomising Air Flow Rate and Fluidising Temperature in Agitated Fluidised Bed Granulation of Cocoa-Milk Powders, *International Journal of Food Engineering*: Vol. 1 : Iss. 3, Article 3. **(corresponding author)**

**\*senior author = as project leader or chairman of supervisory committee (main supervisor)**

## Conference Proceedings

### SCOPUS-INDEXED PROCEEDINGS

1. O.J. Ojo-kupoluyi, S.M. Tahir, M.A. Azmah Hanim, **M.S. Anuar**, T.T. Dele-Afolabi, Investigating the effect of sintering temperature on the microstructure and hardness of cemented tungsten carbide/steel bilayer, *IOP Conference Series: Materials Science and Engineering*, vol. 469, 2019, 012020. **(co-author)**
2. Nur Ashikin Yaakub, **Mohd Shamsul Anuar**, Suraya Mohd Tahir, Compaction behaviour and mechanical strength of lactose-sodium starch glycolate and lactose-croscarmellose sodium binary tablets, *IOP Conference Series: Materials Science and Engineering*, vol. 342, 2018, 012026. **(senior and corresponding author)**
3. Azierah Zawiyah, **Mohd Shamsul Anuar**, Colour and spreadability of neem (azadirachta indica a. juss) ointment and cream formulations, *IOP Conference Series: Materials Science and Engineering*, vol. 342, 2018, 012014. **(senior and corresponding author)**

4. Indra Kumar Rajoo, Suraya Mohd Tahir, Faieza Abdul Aziz, **Mohd Shamsul Anuar**, Resin bleed improvement on surface mount semiconductor device, IOP Conference Series: Materials Science and Engineering, vol. 342, 2018, 012024. **(co-author)**
5. So'bah Ahmad, **Mohd Shamsul Anuar**, Farah Saleena Taip, Rosnah Shamsuddin, Siti Roha A.M., Effective moisture diffusivity and activation energy of rambutan seed under different drying methods to promote storage stability, IOP Conference Series: Materials Science and Engineering, vol. 203, 2017, 012025. **(senior and corresponding author)**
6. A. Noor Iskandar, M.E. Ya'akob, **M.S. Anuar**, Tropical field performance of dual-pass tray dryer, AIP Conference Proceedings, vol. 1885, 2017, 020016. **(co-author)**
7. Oluwatosin Job Ojo-Kupoluyi, Suraya Mohd Tahir, Mohamed Ariff Azmah Hanim, B.T. Hang Tuah Bin Baharudin, Khamirul Amin Matori & **Mohd Shamsul Anuar**, Sintering Behaviour of Cemented Tungsten Carbide and Steel Bilayer, *Key Engineering Materials*, Vol. 740, 2017, p. 60-64. **(as co-author)**
8. S.M. Tahir, **M.S. Anuar**, D. Simmadorai, The ejection and strength of binary iron-cellulose powder compacts, *Applied Mechanics and Materials*, vol. 564, 2014, p. 434-438. **(as co-author)**
9. Tew X.W., Khalid N.I., Aziz N.A., Taip F.S., **Anuar M.S.**, A conceptual design of fouling deposit adhesiveness gauge, AIP Conference Proceedings, vol. 1440, 2012. **(as co-author)**

## REFEREED CONFERENCE PROCEEDINGS

1. So'bah Ahmad, **Mohd Shamsul Anuar**, Farah Saleena Taip, Rosnah Shamsuddin. Optimization of fat yield from rambutan (*Nephelium Lappaceum* L.) seed under convective drying. Postgraduate Symposium for Environmental Engineering Technology, 2016, p. 1-11.
2. N.I. Khalid, N.Ab. Aziz, A.A. Nuraini, F.S. Taip, **M.S. Anuar**. Alkaline cleaning-in-place of pink guava puree fouling deposit using lab-scale cleaning test rig. *Agriculture and Agricultural Science Procedia* 2, 2014, p. 280-288.
3. I. S. Shamsudin, **M. S. Anuar**, Y. A. Yusof, A.H. Mohd. Hanif, S. M. Tahir. Compaction of urea 46% nitrogen by die compaction. International Conference on Agricultural and Food Engineering for Life (Cafei2012), 2012. p. 575-582.
4. Pau Loke Show, **Mohd Shamsul Anuar**, Yus Aniza Yusof, Arbakariya Ariff, Tau Chuan Ling. Enhancement the production of lipase derived from *bukhoderia cenopacia* st8 by optimization of the fermentation operation. International Conference on Agricultural and Food Engineering for Life (Cafei2012), 2012. p. 117-121.
5. N. Abu Bakar, N.S. Mohamad, **M.S. Anuar**, S.M. Tahir. Fundamentals Compaction of Bilayered Tablets. International Conference on Agricultural and Food Engineering for Life (Cafei2012), 2012. p. 328-338.
6. N.I. Khalid, N. Ab Aziz, F.S. Taip, **Anuar, M.S.** Concentric tube-fouling rig for investigation of fouling deposit formation after heat treatment of pink guava puree. The 2<sup>nd</sup> International Symposium on Processing & Drying of Foods, Vegetables and Fruits (ISPDFVF 2012), 2012, p. 1-4.



7. Y.A. Yusof, S.N. Mohd. Din, N.L. Chin, **M.S. Anuar**. Stress relaxation of selected viscoelastic herbs. Regional Tribology Conference, 2011.
8. X.W. Tew, N.I. Khalid, N.A. Aziz, F.S. Taip, **Anuar, M.S.** A conceptual design of fouling deposit adhesiveness gauge. The 4<sup>th</sup> International Meeting of Advances in Thermofluids, 2011, p. 41-48.
9. S.M. Tahir, **M.S. Anuar**. Finite Element Simulation of Metal Powder Compaction in The Design of Multilevel Parts. Proceedings of International Conference on Design and Concurrent Engineering, 2010.
10. Iryane Ismail, **Mohd Shamsul Anuar**, Rosnah Shamsudin. Physical properties of Malaysian coffee bean (*coffea liberica*). International Conference on Agricultural Extension (AGREX'10), p. 350-354.
11. Mohd Salleh F.S., Yusof Y.A., Chin N.L., **Anuar M.S.** Flow properties of acdisol and microcrystalline cellulose. World Engineering Congress, 2010, p. 171-179.
12. **Anuar M.S.**, Tasirin S.M. Fluidized bed coating: a short review, Proceedings of the 2<sup>nd</sup> Asian Particle Technology Conference December, volume 2, pg. 573-577.

#### Chapter in Books

1. Fara Wahida Ahmad Hamidi, **Mohd Shamsul Anuar**, Azhari Samsu Baharuddin, Mohd Afandi P. Mohamed, Mohd Nazli Naim, Suraya Mohd Tahir (2018), Preliminary characterization of phoenix dactylifera (dates) and lactose monohydrate binary powder mixture. In M.A. Azmah Hanim, C.N. Aiza Jaafar & K. Vidyatharran (Eds.), *Basic methodology: sample preparation and characterization* (pp. 31-34). UPM Serdang: Department of Mechanical & Manufacturing Engineering, UPM.
2. Sharifah Nur Nadira Meor Johanis, **Mohd Shamsul Anuar**, So'bah Ahmad, Suraya Mohd Tahir (2018), Flowability characteristics of rambutan powder (*nephelium lappaceum* L.) obtained under shade and desiccant-dehumidified drying methods. In M.A. Azmah Hanim, C.N. Aiza Jaafar & K. Vidyatharran (Eds.), *Basic methodology: sample preparation and characterization* (pp. 35-40). UPM Serdang: Department of Mechanical & Manufacturing Engineering, UPM.
3. Syamimi Mohd Yusof, S.M. Tahir, M.A. Azmah Hanim, E.E. Supeni, **M.S. Anuar** (2018), Density distribution for iron powder compaction using ABAQUS. In M.A. Azmah Hanim, C.N. Aiza Jaafar & K. Vidyatharran (Eds.), *Basic methodology: sample preparation and characterization* (pp. 50-53). UPM Serdang: Department of Mechanical & Manufacturing Engineering, UPM.

Research Grants (as Project Leader)					
No.	Project Title	Duration	Amount (RM)	Source	Role
1	Compaction of single layer and bilayer Phoenix dactylifera tablets  (vot no:9660700)	15 <sup>th</sup> August 2018 – 15 <sup>th</sup> August 2020	25,000	UPM IPS	Project Leader
2	Particle Sizing, Mechanical, Morphological, Rheological, And Powder Storage Stability On Mixing Of Methyl Ester Sulfonates Under High Shear Mixer  (vot no: 9633900)	2 <sup>nd</sup> April 2018 – 2 <sup>nd</sup> April 2020	25,000	UPM IPS	Team Member
3	Process Development of Starch and By-products from sweet potatoes  (vot no:9660302)	1 <sup>st</sup> August 2018 – 1 <sup>st</sup> August 2020	139,000	UPM GP-IPB	Team Member
4	Microcrystalline Cellulose Production From Oil Palm Empty Fruit Bunches (OPEFB) and its Functional Characteristics in Food Industry  (vot no: 9523300)	1 <sup>st</sup> April 2017 – 31 <sup>st</sup> March 2019	100,000	UPM GERAN PUTRA BERIMPAK	Team Member
5	Tropical Field Assessments On Crops Drying Using Portable Solar PV Dryer  (vot no: 9534800)	1 <sup>st</sup> June 2017 – 1 <sup>st</sup> December 2018	20,000	UPM IPS	Team Member
6	Development of relationship between density and fracture toughness of metal powder compact  (vot no: 5524863)	2 <sup>nd</sup> November 2015 – 1 <sup>st</sup> May 2018	69,200	FRGS	Team Member



7	Optimum Drying Conditions for obtaining Oil from Rambutan (Nephelium Lappoceum L.)  (vot no: 9464600)	1 <sup>st</sup> December 2015 – 1 <sup>st</sup> December 2017	17,000	UPM IPS	Project Leader
8	Effect Of Compact Density on The Fracture Toughness of Metal Powder Compacts  (vot no: 9452300)	1 <sup>st</sup> October 2015- 1 <sup>st</sup> October 2017	20,000	UPM IPS	Team Member
9	Fabrication and Investigation Of Thermal and Mechanical Properties Of WC-Fe/Steel Bimaterial By Powder Metallurgy  (vot no: 9452500)	1 <sup>st</sup> October 2015 – 1 <sup>st</sup> October 2017	20,000	RUGS	Team Member
10	Characterizing Phase Formation and Bio-molecules Partitioning Behaviours in Aqueous Two Phase System (ATPS)  (vot no: 9379700)	1 <sup>st</sup> November 2012 – 22 <sup>nd</sup> October 2014	13,000	RUGS	Project Leader
11	The Formation of Urea 46% Nitrogen Tablets Through Uniaxial Die Compaction  (vot no: 9349100)	1 <sup>st</sup> September 2012 – 22 <sup>nd</sup> August 2014	14,000	RUGS	Project Leader
12	Direct Recovery of Lipase from Crude Microbial Feedstock Using Aqueous Two Phase Systems  (vot no: 9199681)	10 <sup>th</sup> December 2010 - 9 <sup>th</sup> December 2012	100,000	RUGS	Project Leader (replacing Prof. Ling Tau Chuan)
13	Development Of a simplified and Cost-Effective Technique Based On Aqueous two-phase Systems For Direct Recovery Of Interferon- $\alpha$ 2b From Crude E.Coli Feedstock  (vot no: 91937)	15 <sup>th</sup> April 2010 – 14 <sup>th</sup> April 2012	75,000	RUGS	Project Leader (replacing Prof. Ling Tau Chuan)

14	The tablet diametrical elastic relaxation during ejection and its stored elastic energy  (vot no: 5523855)	1 <sup>st</sup> May 2010 – 30 <sup>th</sup> April 2012	40,000	FRGS	Project Leader
15	A correlation between the tablet elastic relaxation during ejection and its mechanical integrity  (vot no: 91902)	10 <sup>th</sup> February 2010 – 9 <sup>th</sup> February 2012	30,000	RUGS	Project Leader

### Student Supervision

#### PhD (Main Supervisor) in UPM

No.	Name	Thesis Title	Status
1	Show Pau Loke	Recovery of lipase from burkholderia sp. using aqueous two-phase systems	Graduated in 2012
2	Chow Yin Hui	Molecular dynamics simulation of aqueous two phase system	Graduated in 2016
3	So'bah Ahmad	Drying characteristics and optimization of fat yield from rambutan seed under non-integrated and integrated power-temperature sequence drying process	Graduated in 2019
4	Fara Wahida Ahmad Hamidi	Compaction study of phoenix dactylifera chewable tablet	On-going

#### PhD (Co-supervisor) in UPM

No.	Name	Thesis Title	Status
1	Haswani Maisarah binti Mustafa	Phytocompounds-based nanoemulsion of artocarpus heterophyllus lam. Leaves extract	On-going

### Student Supervision

#### MASTER (Main Supervisor) in UPM

No.	Name	Thesis Title	Status
1	Iryane binti Ismail	Physico-chemical properties of liberica coffee (coffee liberica w. bull ex hiern) berries, green beans, roasted and powder	Graduated in 2012
2	Intan Soraya binti Shamsudin	Compaction, strength and dissolution characteristics of urea 46% N tablets	Graduated in 2014
3	Zahraa Abdulhussein Mousa	Mechanical characteristics of tableted binary and tertiary pharmaceutical excipient mixtures	Graduated in 2014

#### MASTER (Co-supervisor) in UPM

No.	Name	Thesis Title	Status
1	Faiqa Shazeaa	Compaction characteristics of ficus deltoidea jack extract powder	Graduated in 2012
2	Nurul Izzah binti Khalid	Kinetics of fouling deposit removal of pink guava purees in a cleaning in place test rig	Graduated in 2015
3	Nur Syahida binti Roslan	Dissolution kinetics of selected herbal powders	On-going
4	Jesse Lee Kar Ming	Application of multilayer feedforward neural network in optimization of spray drying coconut milk powder	On-going
5	Zulina binti Abdul Maurad	Powder behaviour of methyl ester sulphonates generated by high shear mixer	On-going
6	Abdurrahman bin Noor Iskandar	Dual-pass PV tray dryer	On-going