



## CURRICULUM VITAE

### PERSONAL DETAILS

**Name** : Rafiziana Md.Kasmani  
**Gender** : Female  
**Date of Birth** : 31/7/1977  
**Nationality** : Malaysian  
**Correspondent Address** : Faculty of Chemical and Energy Engineering, Universiti Teknologi Malaysia, 81310 Johor Bahru, Johor.  
**Telephone** : (Mobile) : +60197707310 (Office): +6075535499  
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### Expertise :

- **Fire engineering:**  
*In this study, we focus on fire building simulation using CFast. Fire and smoke development integrated with passive and active fire protection system are studied in order to estimate the time to escape, toxic gases production, the ceiling temperature and smoke movement. Among projects were UTM main library, Muzium Sultan Abu Bakar Johor Bahru for heritage case study, UTM Scholars Inn for multi level fire building*
- **Gas explosions:**  
*This is the main area of my research works. The aim of this research is to develop a series of methodologies for **classifying flame acceleration and potential detonation hazard** in industrial pipes/vessel including mixtures of different sensitivity. It is crucial to know the physical and dynamics of explosion phenomenon and identify the dominating role of transition to detonation in tubes and in partially confined (vented) channels with fuel-air mixtures with and without obstruction, in order to apply an effective protection and safety systems available to prevent and mitigate the pipeline system. I am heading eight research grant projects: Three is sponsored by the Research University Grant program, worth RM 184,591 in total with 2 projects completed, three projects under Fundamental Research Grant Scheme (FRGS) by Malaysian of Higher Education (MOHE), worth RM177,000 with two projects already completed. Besides, I am also a team member of 12 research grants with specified on material and renewable energy. Our recent collaboration with University of Malaya has granted us a new FRGS grant worth RM 249,450. Numerical analysis using FLACS and Ansys Fluent also been conducted to verify our experimental result. Numerous international refereed journal articles also have been published based on the results of this study.*
- **Dust explosions**  
*This study underlines the characteristic and severity of coal dust explosion. This work focuses on coal dust from South East Asia region i.e. Indonesia and Philippine. With respect to risk analysis, no attention is given on the dust explosion data from South East Asia region in order to analyse this specific hazard into account. Even though no coal mining industry is commercialized in Malaysia, there is a risk of having coal dust explosion due to transportation, storage and uses of coal in power*

generation industry, cement industry and other manufacturing industry. The coal was supplied by Lafarge (M) Sdn.Bhd. as the collaborator. The grant worth RM31,000 was awarded under this study. Besides, I did dust explosion study on 'The influence of ignition sources on the flame speeds and explosion development in dust-air clouds' during my masters in University of Leeds.

- **Venting and suppression explosion**

*This is my PhD work. In this study, I proposed two methods based on burning velocity to be compared with current correlation design in NFPA68 and European Standard. The availability and validity of the proposed equations were compared to experimental work done on various configuration- venting with and without the relief pipe. This work will be further explored on the possibilities of combination two mitigation measures to minimize the risk and hazards caused by either gas or dust explosion i.e. flame arresters and venting. This probably could give better protection to personnel and property as well as lessen the equipment damage.*

## ACADEMIC QUALIFICATIONS

Year	2005 - 2009	: Ph.D. University of Leeds, UK
Year	2003-2004	: M.Sc. in Fire and Explosion Engineering University of Leeds, UK
Year	1998-2001	: B. Sc. in Chemical Engineering Universiti Teknologi Malaysia
Year	1995 -1998	: American Degree Program (ADP), PPP/ITM Shah Alam, Selangor, Malaysia. ESL, First and Second Year, Chemical Engineering

## AWARD AND HONORS RECEIVED

1. Fulbright Malaysian Scholar Program recipient for 2017/2018
2. Erasmus+ Mobility Staf Program for 2017 in Universidad Politécnica de Madrid (UPM)
3. Keynote speaker on Biogas application: Safety assessment as a transport fuel, 3rd Renewable Energy and Green Technology International Conference 2016, 12 – 14 April 2016, Jakarta, Indonesia
4. AUN-SEED Short-term Research Program in Japan (SRJP) JFY 2015 Award, Sept 2015
5. High Impact Journal Publication 2014, Energy Research Alliance
6. Bronze medal, Innovative Practices in Higher Education Expo 2014 (I-PHEX 2014)
2. Bronze medal, Bio-Fuel Production Via Flash Pyrolysis Of Agricultural Residues, 15th Industrial Art and Technology Exhibition (INATEX)2013
3. UTM Excellent Service Award 2012
4. Malaysian Federal Scholarships Award (Ph.D. program) 2005 – 2009.
5. Dean's List Award June 2001 (4<sup>th</sup>. Year, B.Eng.Chemical) FKKKSA.
6. Dean's List Award Feb 2001 (3<sup>rd</sup>. Year, B.Eng.Chemical) FKKKSA.
7. Head of PPP Award Spring 1997 (2<sup>nd</sup>. Year, ADP Chem.Eng.) PPP/ITM.
8. Honors List Award Fall 1997 (2<sup>nd</sup>. Year, ADP Chem. Eng.) PPP/ITM.
9. Honors List Award Summer 1997 (2<sup>nd</sup>. Year, ADP Chem. Eng.) PPP/ITM.
10. Honors List Award Spring 1997 (2<sup>nd</sup>. Year, ADP Chem. Eng.) PPP/ITM.

## PROFESSIONAL MEMBERSHIP / QUALIFICATIONS / RECOGNITION

- Jawatankuasa Pengurusan IECEx Kebangsaan (*National IECEx Management Committee, ExMC*)

- Ahli Mesyuarat Berkaitan Penggunaan Kontena Sebagai Kediaman Dan Kegunaan Komersial, Bahagian Keselamatan Kebakaran, Jabatan Bomba dan Penyelamat Malaysia
- Technical editor for International of Renewable Energy, Nobel Science Publisher, 2016
- Member, Combustion Institute (British Section) since 2006
- Member, IChemE Malaysia since 2010
- Graduate Engineer, Board of Engineer Malaysia (BEM) since 2011
- Member, The Institution of Engineers Malaysia (IEM) since 2011
- Editor of Annual Report Publication, FPREE 2011
- Editorial Board of Jurnal Teknologi Special Edition ( Development in Oil and Gas Rechnology towards Energy Sustainability), 2011
- Guest Editor of The Fourth International Conference and Workshops on Basic and Applied Sciences (4th ICOWOBAS) & Regional Annual Fundamental Science Seminar 2013 (RAFSS 2013)
- Editorial Review Board Member, World Academy of Science, Engineering and Technology, 2015 to date
- Jury for Conference on Emerging Energy and Process Technology 2013 (CONCEPT 2013), 9 -13 Dec 2013, Desaru, Johor
- Reviewer for International Conference on Chemical & Process Engineering ( ICheaP)
- Reviewer for International Conference on Safety and Environment in Process and Power Industry (CISAP)
- Reviewer for Process Safety and Environmental Protection (PSEP), Journal of Cleaner Production, Elsevier
- Reviewer for Combustion, Science and Technology, Francis & Taylor
- Reviewer for International Conference on Global Sustainability and Chemical Engineering (ICGSCE), 2014 for Journal of Advanced Material Research
- Reviewer for The International Colloquium on the Dynamics of Explosions and Reactive Systems (ICDERS) 2015
- Reviewer for Jurnal Teknologi

## **ADMINISTRATIVE EXPERIENCE**

### **Faculty Level**

1. May 2004 – Task Force for Industrial Advisor Program
2. Feb 2004 – Jan 2006 – Committee in Faculty Award Achiever, FKKSA
3. Sept - Oct 2004 – Task Force for English Usage in Class
4. Dec 2004 – Dec 2006 – Committee in Syllibus and Curriculum, FKKKSA
5. Dec 2004 – Dec 2005 – Committee in e Learning Development for Gas Engineering Department, FKKSA
6. Dec 2004 – Dec 2005 – Committee in Quality Assurance Document Preparation for Gas Engineering Department, FKKSA
7. July 2009 – Task Force for New Faculty Establishment, Faculty of Petroleum and Renewable Energy Engineering (FPREE)
8. Oct 2009 – Faculty Panel of Final Exam Question Evaluation
9. Sept 2009 – August 2011 – Co-Chair International Course for Energy Management
10. Sept 2009 – Sept 2011 – Research Coordinator of Gas Engineering PostGraduate Studies
11. Oct 2009 – Oct 2011 – Committee for Postgraduates Academic Quality, FPREE
12. Nov 2009 – Oct 2011 – Task Force of Proposal Preparation for Masters in Science ( Gas Engineering and Management)
13. Dec 2010 – Dec 2012 – Committee Member of FPREE Faculty Dinner
14. Nov 2010 – Oct 2012- Head of Research Lab, FPREE
15. June 2010 – Sept 2010 – Task Force for Annual Report FKKKSA 2009
16. Oct 2010 – Sept 2011 – Coordinator for Harvard Business School Case Study, FPREE

17. Oct 2010 – Dec 2010 – Task Force for EAC Document Preparation of Gas Engineering Department, FPREE
18. Oct 2010- July 2011 – Committee for MSc ( Renewable Energy) Proposal, FPREE
19. Sept 2010- Sept 2012 – Coordinator for MKG/PKG
20. Nov 2010 – Oct 2017 – Committee in Asset Management, FPREE
21. Aug 2011 – July 2013 – Committee in Faculty Publication, FPREE
22. August 2011- Ad Hoc Task force for Annual Report Publication, FPREE
23. Sept 2011 – August 2013 – Committee in Relationship Database (Internationalization & Industrial Linkage)
24. Sept 2011 – Coordinator for Student Interns Program
25. Sept 2011 – August 2013 – Chair, Standard Skills Improvement( Holistic Student Development)
26. April 2012 – April 2014 – Committee in Professional Qualification Development (Pro-Q)
27. May 2010 – Dec 2014 – English Facilitator FPREE
28. Jan 2015 to June 2015– Head of Service lab, FPREE
29. June 2015 to date- Head of Energy Engineering Department
30. July 2015 – June 2017 – Committee in Faculty Trustee, FPREE

### **University Level**

1. Sept 2010 - Advisor for Global Outreach Program to Melbourne, Australia
2. May – Sept 2011 – Key Focus Area (KFA) Research and Innovation
3. April 2012 – Advisor for Global Outreach Program to Moscow
4. Nov – Dec 2012 – UTM-Maldives Summer School: Advanced Research Skills 2012
5. Sept 2013 to date – Task Force Committee for Book Publication of ‘How to Get Yourself Employed’
6. Sept 2014 – Dec 2014 – Task Force on RMK11 Application (Energy Security)
7. April 2016- March 2017- EU grant Champion

### **OTHERS EXPERIENCE**

1. 9 – 11 July 2004 – Attendee for Student Motivational Program, Gas Engineering Department
2. 30 July – 1 August 2004 – Secretary for Student Excellent Program, Unit Bimbingan Rakan Pelajar (UBRP)
3. 28 Aug 2004 – Facilitator for Student Academic Enhancement Program of Year One Students, FKKKSA, organised by UBRP
4. Sept 2010- Sept 2013 – Academic advisor for Gas Engineering Students
5. Feb 2010 – Participant as Master Trainers in Learning and Teaching in Quality Teaching for Learning in Higher Education, 23 – 25 Feb 2010, Swiss Garden Hotel, KL
6. 8 July 2010 – Facilitator for Active Learning Course, Bilik Seminar 2, Arkid 17, Pusat latihan, UTM
7. Jan 2010 to date – Facilitator for How To Get Yourself Employed, FPREE/FKK
8. May 2011- UTM Postgraduate Info Day 2011, UTM International Campus
9. April 2012 – Evaluation Panel for Methodology Course (UYP 0010)
10. 13 – 25 July 2012 – Participant in International Summer School on PEM Fuel Cell, Nevsehir, Turkey.
11. Sept 2012 – Evaluation Panel for University Research Grant (GUP) Tier 1 for Infocomm Research Alliance
12. Oct 2012 – Judge of the Academic Research Colloquium 2012 FPREE and FKK
13. January 2013 – Evaluation Panel for Masters Project MKH1614

## **NATIONAL COMMITTEE**

1. Appointment as Facilitator and Subject Matter Expert (SME) for PSMS5103 Process Safety Management for Postgraduate Course, Open University Malaysia – May 2013 to date

## **INTERNATIONAL APPOINTMENT/COMMITTEE**

1. Appointment as Member of International Advisory Committee for 5th International Conference on Safety and Environment Process and Power Industry, 3-6 June 2012, Milan, Italy
2. Appointment as Member of International Advisory Committee for 11th International Conference on Chemical & Process Engineering, 2-5 June 2013, Milan, Italy
3. Appointment as Member of International Advisory Committee for 12th International Conference on Chemical & Process Engineering, 19 – 22 May 2015, Milan, Italy
4. Appointment as Scientific and Technical Committee, World Academy of Science, Engineering and Technology, 2015 to date

## **RESEARCH ACTIVITIES**

### **RESEARCH PROJECT UNDERTAKEN**

#### **Current Project**

1. Leader, Parametric And Thermal Investigation Of Horizontal Buoyant Jet Fires Impingement Radiation on Plant Installation  
GUP Tier 1  
RM40,000.00  
July 2017- June 2019
2. Leader, Protection And Mitigation Techniques On Nano Dust/ Fuels In Closed And Vented Explosion (GUP Tier 1)  
RM50,000.00  
July 2016- Dec 2017
3. Member, Study on the factors affecting the performance of the biological cathodic protection system for hydrocarbon pipelines (Ref: FRGS/1/2016/TK02/UTM/02/2)  
RM 74690.00  
July 2016-June 2018
4. Member, The influence of duct size and fuel concentration on the flame and pressure characteristic towards the secondary explosion (Ref: FRGS/1/2016/TK02/UMP/02/5).  
RM 124,200.00  
July 2016-June 2018
5. Member, Enhancing the Safety of Industrial Piping Process by Investigation on the Dynamic and Kinetic Properties of Flame Transmission and Propagation of Premixed Gases in a T Pipeline (FRGS)  
RM 101,650.00  
Dec 2014-Nov 2017
6. Member, Physicochemical Properties Study and Phenolic Recovery Analysis of Malaysia's Biomasses Derived Pyrolysis Oil (FRGS)  
RM 72,900.00  
Dec 2014-Nov 2016
7. Member, Morphological And Structural Studies Of Cellulose Acetate Based Asymmetric Membrane for Oxygen Enrichment (GUP Tier 1)  
RM47,000.00  
July 2017 –June 2018
8. Member, Determination of mixing time for homogeneous mixing of different grades of Liquefied Petroleum Gas (LPG) in a non-stirred tank (GUP Tier 1)  
RM 45,620.00  
July 2017 –June 2018

9. Member, Kinetics Mechanism of Palm-Biodiesel Blend Combustion: Experiment and Modeling (FRGS)  
RM 85,000.00  
Nov 2015- Nov 2017
10. Member, Systematic Framework For Protecting Workers Health In Chemical Plants Due To Fugitive Emissions (Flagship)  
RM50,000.00  
Jan 2015- Jan 2018

## **PROJECT LEADER**

1. **Study of the flammability limit of fuel/air mixtures with the influence of H<sub>2</sub>/inert/diluent**
  - Grant from Universiti Teknologi Malaysia (UTM)
  - Vot: 77930
  - Date : May 2009 until April 2010.
2. **Explosion development in pipelines: the implications on the explosion protection devices on NG/air and LPG/air mixture**
  - GUP UTM grant (RM44,000)
  - Vot : Q.J13000.7142.00J48
  - Date : April 2011 till Sept 2012
3. **Experimental investigations of South East Asia coal dust explosion.**
  - GUP UTM grant (RM31,000)
  - Vot : Q.J130000.2642.06J66
  - Date: April 2012 till May 2013
4. **Study of flame acceleration and deflagration to detonation transition in process piping**
  - GUP UTM grant (RM120, 591)
  - Vot : Q.J130000.2542.03H41
  - Date: Dec 2012 till Nov 2014

## **PROJECT MEMBERS**

5. **Removal of carbon dioxide using Emulsion Liquid membrane containing amine blends (MEA/MDEA/Piperizine) in rotating disc contactor**
  - GUP UTM grant (RM126,000)
  - Vot : Q.J130000.7142.00H42
  - Date: April 2011 till March 2013
6. **A Kinetic Model for Production of Biofuels of Malaysia's Biomasses via Flash Pyrolysi**
  - GUP UTM grant (RM33,000)
  - Vot : Q.J130000.7142.00R52
  - Date: June 2011 till May 2013

## **FUNDAMENTAL RESEARCH GRANT SCHEME (FRGS FUND)**

### **Project Leader**

1. **Study on the explosion development of closed pipe with and without 90 degree bend'**
  - FRGS grant ( RM44,000)
  - Vot : 78619
  - Date: May 2010 till April 2012

2. **Study on the explosion properties in closed pipe with 90 degree bends using CFD simulation'**
  - FRGS grant (RM44,000)
  - Vot: 78680
  - Date: August 2010 till July 2012
  
3. **Experimental and numerical analysis on turbulent flame acceleration characteristics and behavior in pipes**
  - FRGS (RM89,000)
  - Vote : 4F330
  - Date: 16 Dec 2013 till 15 Dec 2015

## **PROJECT MEMBER**

1. Thermogravimetric and Elemental Analyses Studies of Malaysia's Biomasses for Production of Biofuels via Flash Pyrolysis
  - FRGS grant (RM76,760)
  - Date: Feb 2012 till Jan 2014
  
2. Characterization of alginate-like exopolysaccharides isolated from aerobic granular sludge in industrial wastewater
  - FRGS grant (RM 150,000)
  - Date: May 2013 – April 2015
  
3. Methyldiethanolamine(MDEA) and 2-amino-2 methyl-1-propanol(AMP) as extractant in emulsion liquid membranve for carbon dioxide separation
  - FRGS grant (RM 86,200)
  - Date: July 2014 – June 2016
  
4. Pineapple Peel Fiber Biocomposite : Characterization, Mechanical and Biodegration Studies
  - FRGS grant (RM 87,000)
  - Date: Jan 2014 – Dec 2015
  
5. Enhancing the Safety of Industrial Piping Process by Investigating the Dynamic and Kinetic properties of flame transmission and propagation of premixed gases in a T-pipeline
  - FRGS grant (RM114,000)
  - Date: July 2014 – June 2016

## **Others**

1. Computer-aided tool for designing operable, flexible and inherently safer-healthier chemical reactor systems
  - ERGS 24 month (RM 84,000)
  - Date: April 2012 – March 2014
  
2. Mypyros: A new bench scale flash pyrolysis technology for bio-oil production from Malaysia's Biomass.
  - ERGS 24 month (RM109,000)
  - Date: April 2012 – March 2014

3. Carbon dioxide separation using kenaf (*Hibiscus Canninus* (L)) based adsorbent in pressure swing adsorption system
  - Science Fund (RM 155,000)
  - Date: Nov 2012 – Oct 2014

### **LIST OF PROJECTS AWARDED**

1. Principle investigation on Fire Performance analysis on container modular building. The project was based on the new building of Kolej Poly-Tech Mara (KPTM). The total project cost was RM10000.00
2. Expert consultants for BOMBA on drafting guidelines for fire safety design following UNIFORM BUILDING BY-LAWS 1984 (UBBL 1984).
3. Novel explosion protection and mitigation technique in gas pipeline system. Ongoing project with Fike Corporation Asia Pacific Regional. Applied for Science Fund 2015. (RM450,000.00). In this project, Fike provides support which includes share experience and expertise of flame arrestors and FLACS, make available flow resistance test apparatus, heat absorption / quenching test apparatus, large scale test facilities, and share expert network. Letter of Intent is enclosed.
4. R.M.Kasmani et al. Proximate and ultimate test for Phillipine and Indonesian coal. Lafarge (M) Sdn.Bhd. April – Sept 2010. (RM10,000.00). In this study, Lafarge provided coals from Indonesia and Phillipine.

### **CONSULTATION**

1. Kajian impak perundangan [regulatory impact assessment (ria)] terhadap *potential threats* di dalam *integrity management plan* dalam sistem talian paip petroleum dan penyeliaan pihak berkuasa memeriksa ketiga terhadap keseluruhan aktiviti-aktiviti rekabentuk, pemasangan, pemeriksaan, pengujian dan pentauliahan talian paip petroleum- DOSH, August 2013 – July 2014. RM 248,000.00  
*This study investigates the potential threats in pipeline system for Integrity Management Plan includes the abandonment piping based on Code and standards practice globally. Risk Assessment Impact (RIA) was also conducted to propose the best practise for 3rd parties involvement in design, construction, commissioning, inspection and abandonment of the pipeline system as currently, all activities involving on Integrity management Plan is basically under self-regulation of the said companies.*
2. Study on the effectiveness of commercial and residential natural gas odorisation system in Peninsular Malaysia, Malaysia Energy Commissioner. March – September 2012. RM 280,000.00  
*This project studies the effect of factors that may contribute to odor fading which is caused by adsorption, absorption, oxidation or any combination. We did several field customers'end commercially and residential. These results were compared with FLACS for dispersion profile and Fluent for dynamic flow profile. Appropriate recommendations for achieving effective odorisation level at all times were also proposed in order to ensure the safety of the gas installation.*
3. Risk Improvement survey on Jomalina Nuri and KCP, Klang – RHB Risk Insurance, December 2012. RM10,000.00  
*Risk assessment assessment on the current practise of Jomalina Nuri and KCP plant. This includes fire and explosion risk assessment, and potential of threats during operation.*



## **PATENT FILED/DISCLOSURE**

1. Rafiziana Md.Kasmani, Wan Norhayati Wan Salleh, UTM OCW Chemical Reaction Engineering: Mole Balances, Conversion & Reaction Sizing, Rate Laws & Stoichiometry, Isothermal & Reaction Design, Collection & Analysis of Rate Data, Multiple Reaction and Steady state non-isothermal reactor.

## **SUPERVISION**

### *PhD Student*

<b>Year</b>	<b>No.</b>	<b>Name</b>	<b>Status</b>	<b>Title</b>	<b>Roles of Supervision</b>
2011	1	Siti Zubaidah Sulaiman	Graduated 9 July 2015	Experimental and Numerical Study on the explosion mechanism in the pipelines	Main Supervisor
2014	2.	Sina Davazdah Emami University of Malaya	Graduated April 2016	Confined and unconfined gas explosion in different pipe configuration	Co-Supervisor
2015	3	Khairiah Mohd.Mokhtar (KHA150011) University of Malaya	2015-2017	Nanodust explosion on industrial safety application	Co-supervisor
2016	4	Zine Labidine Messaoudani (KHA140098) – University of Malaya	2016-2018	Hydrogen jet fire	Co-supervisor
2016	5	Ismaila Aminu	2015-2017	Fire and explosion safety assessment due to large commercial aircraft impact on a nuclear reactor containment	Main Supervisor
2016	6	Nur Shahidah Binti Ab Aziz	2016-2018	Jet fire	Main Supervisor

### *MSc. Student*

<b>Year</b>	<b>No.</b>	<b>Name</b>	<b>Status</b>	<b>Title</b>	<b>Type</b>	<b>Roles of Supervision</b>
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2013	1	Hazwani Fatimah binti Mohd. Zaidi	Ongoing 2013-2015	Numerical analysis on turbulent flame acceleration characteristics in pipes	Research	Main Supervisor
2014	2	Mohd Syazwan Marjan	Graduated 2014	Explosion on the bends in pipes using hydrogen-enriched methane mixtures	Taught Course	Main Supervisor
2013	3	Miss Hasimawaty binti Mat Kiah	Graduated 2013	Study on the explosion parameters in the pipe with and without 90 degree bend.	Research	Main Supervisor
2013	4	Wan Zaiton binti WanSulaiman	Graduated 2013	Coal dust explosion	Research	Main Supervisor
2012	5	Sina Davazdah Emami	Graduated 2012	Flame acceleration of premixed hydrogen-methane/air explosion in pipeline.	Mix mode	Co-Supervisor
	6	Meisam Rajabi	Graduated 2012	Hydrogen explosion in 90 degree bend pipe.	Mix mode	Co- Supervisor

## PUBLICATIONS

### REVIEWED JOURNAL

1. Ismaila, A., Kasmani, R.M., Ramli, A.T., Consequence assessment of vapour cloud explosion involving large commercial airliner crash upon nuclear reactor containment, *Chemical Engineering Transactions* (2017), 56, pp. 1753-1758
2. Balasundram, V., Ibrahim, N., Kasmani, R.Md., Hamid, M.K.A., Isha, R., Hasbullah, H., Ali, R.R., The effect of catalyst loading (Ni-Ce/Al<sub>2</sub>O<sub>3</sub>) on coconut copra pyrolysis via thermogravimetric analyser, *Chemical Engineering Transactions* (2017), 56, pp. 901-906
3. Zaidi, N.H.F.M., Kasmani, R.Md., Mustafa, A., Ibrahim, N., Ali, R.R., Hasbullah, H., Shokri, M.N.M., Samsudin, M.D.M., Numerical investigation on flame propagation in vented gas explosion, *Chemical Engineering Transactions* (2017), 56, pp. 1357-1362
4. Samsudin, M.D.M., Don, M.M., Ibrahim, N., Kasmani, R.M., Zakaria, Z., Kamarudin, K.S., Batch fermentation of bioethanol from the residues of *elaeis guineensis*: Optimisation using response surface methodology, *Chemical Engineering Transactions* (2017), 56, pp. 1579-1584
5. Balasundram, V., Ibrahim, N., Samsudin, M.D.H., Kasmani, R.Md., Hamid, Mohd.K.A., Isha, R., Hasbullah, H., Thermogravimetric studies on the catalytic Pyrolysis of rice husk, *Chemical Engineering Transactions* (2017), 56, pp. 427-432
6. Balasundram, V., Ibrahim, N., Kasmani, R.Md., Hamid, M.K.A., Isha, R., Hasbullah, H., Ali, R.R., Catalytic pyrolysis of coconut copra and rice husk for possible maximum production of bio-oil, *Chemical Engineering Transactions* (2017), 56, pp. 1177-1182
7. Sina Davazdah Emami, Rafiziana Md. Kasmani, Mahar Diana Hamid, Che Rosmani Che Hassan, Experimental study on the flame acceleration of premixed hydrocarbons-hydrogen/air

- mixtures in tee pipes, *Journal of Loss Prevention in the Process Industries*(2017),45, p 229-241. (IF = 1.406)
8. Sina Davazdah Emami, Rafiziana Md. Kasmani, Mahar Diana Hamid, Che Rosmani Che Hassan, Effect of Inhibitor Gases on Hydrogen Flame Propagation in a Confined Tee Pipe (Part II): Influence of Obstacles, *Fuel* (2017), 190, p 260-267. (IF = 3.513)
  9. Sina Davazdah Emami, Rafiziana Md. Kasmani, Mahar Diana Hamid, Che Rosmani Che Hassan, Kinetic and Dynamic Analysis of Hydrogen-enrichment Mixtures in Combustor Systems - A Review Paper, *Renewable & Sustainable Energy Reviews* (2016), 62, p 1072–108. (IF = 6.901)
  10. Sina Davazdah Emami, Rafiziana Md. Kasmani\*, Mahar Diana Hamid, Che Rosmani Che Hassan, Effect of Inhibitor Gases on Hydrogen Flame Propagation in a Confined Tee Pipe (Part I), *Fuel*. (IF = 3.52)
  11. Emami, S.D, Rajabi, M., Che Hassan, C.R., Hamid, M.D.A., Kasmani, R.M. and Mazangi, M., Experimental study on premixed hydrogen/air and hydrogen–methane/air mixtures explosion in 90 degree bend pipeline, *International Journal of Hydrogen Safety* (2013), 38(32), p 14115- 14120. (IF = 3.313)
  12. Kasmani R.M.\*, Andrews, G.E. and Phylaktou, H.N., Experimental study on vented gas explosion in a cylindrical vessel with a vent duct, *Process Safety and Environmental Protection* (2012), 91 (4), p 245-332. (IF = 2.551)
  13. S.Z.Sulaiman, R.M.Kasmani, A.Mustafa, Experimental Study On The Effect Of Curved Tube Of Premixed Hydrogen-air Explosion, *Journal of Engineering Science And Technology (Jestec)* (2015), 10(5), p. 50-60.
  14. N.H.F.M.Zaidi, R.M.Kasmani, A.Mustafa, Numerical Investigation on Laminar Burning Velocity Of Hydrogen-Methane/Air Mixtures: A Review, *Journal of Engineering Science and Technology (Jestec)* (2015), 10(5), p. 40-49.
  15. Noorhaza Binti Alias, Norazana Ibrahima, Mohd. Kamaruddin Abd. Hamid, Hasrinah Hasbullah, Roshafima R. Ali, Rafiziana Md. Kasmani, Investigation of oil Palm Wastes' Pyrolysis by Thermo-gravimetric Analyzer for Potential Biofuel Production, *Energy Procedia* (2015), 75, p.78-83.
  16. Sulaiman, Z, Kasmani , R.M. and Mustafa, A. Effects of Obstacles on Premixed Hydrogen-Air Mixtures Explosion in Closed Pipe, *Jurnal Teknologi* (2015), 75 (6), p. 109-113.
  17. Ali, R.R., Abdul Rahman, W.A.W, Kasmani, R.M., Ibrahim, N, Hasbullah, H., Sadikin, A.N., Biofilm Green Packaging: Characterization and Biodegradation Studies, *Applied Mechanics & Materials* (2014), p. 67-72.
  18. Sulaiman, S.Z, Kasmani, R.M., Mat Kiah, M.H., Kidam, K, Hassim, M.H, Ibrahim, N., Ali, R.R., The Influence of 90 Degree Bends in Closed Pipe System on the Explosion Properties Using Hydrogen-enriched Methane, *Chemical Engineering Transactions* (2014), 36, p 271-276.
  19. Amzirin, M.I, Hassim, M.H, Kidam, K, Kasmani, R.M., Mat, R.,The Effectiveness of Emergency Response Plan in Specialty Chemicals Company in Malaysia, *Chemical Engineering Transactions* (2014), 36, p 91-96.
  20. Kidam, K., Kamarden, H, Hurme, M, Hassim, M.H., Kasmani, R.M., Accident Contributor Interconnection Study as a Basis for Accident Mechanism Prediction, *Chemical Engineering Transactions* (2014), 36, p 25-30.
  21. Kiah, M.H.M and Kasmani, R.M., Experimental Study on Premixed Flame Acceleration in Closed Pipe, *Jurnal Teknologi (Sciences & Engineering)* (2013), 62(1), p. 45–51,
  22. Kasmani R.M., Andrews, G.E., Phylaktou, H.N., Hassim, M.H, Ibrahim, N., Ali, R.R., Hasbullah, H., Fast turbulent flames In Duct-Vented Gas Explosion, *Chemical Engineering Transaction* (2013) , 32, p 145 -151
  23. Ali, R.R.\*, Abdul Rahman, W.A.W, Kasmani, R.M., Ibrahim, N, Mustapha, S.N.H, Hasbullah, H., Tapioca Starch Bio-composite for Disposable Packaging Ware, *Chemical Engineering Transaction* (2013), 32, p1711-1717

24. Hasbullah, H., Cheer, N.B., Ibrahim, N., Kasmani, R.M., Ali, R.R., Ismail, A.F., Mindel S-1000 Based Asymmetric Membranes For O<sub>2</sub>/N<sub>2</sub>Separation, Chemical Engineering Transaction (2013) , 32, p 2035-2041
25. Ibrahim, N., Jensen, P.A., Dam-Johansen, K., Hamid, M.K.A., Kasmani, R.M., Ali, R.R., Hasbullah, H., Experimental Investigation Of Flash Pyrolysis Oil Droplet Combustion, Chemical Engineering Transaction (2013), 32, p 667- 673
26. Abbaszadeh,S., Hassim, M.H., Marku, H., Kasmani, R.M. Computer Aided Assessment and Design of Occupationally Healthier Process During Research and Development Stage, Chemical Engineering Transaction (2012) , 26, p 249-254
27. Kasmani, R.M., Andrews, G.E., Phylaktou, H.N., Ibrahim, N., Ali, R.R., Experimental investigation of vessel volumes in vented explosion, World Academy of Science, Engineering and Technology (2012) , 70, p 820-826
28. Ibrahim, N., Jensen, P.A., Dam-Johansen, K., Ali, R.R., Kasmani, R.M., Influence of reaction temperature and water content on wheat straw pyrolysis, World Academy of Science, Engineering and Technology (2012) , 70, p 788-794
29. Kasmani R.M., Andrews, G.E. and Phylaktou, H.N., The Influence Of Vessel Volume And Equivalence Ratio In Vented Gas Explosions, Jurnal Teknologi, 56, 155-164, 2011.
30. Sulaiman, W.Z.W and Kasmani R.M., An Overview Of Explosion Severity On Dust Explosion, Jurnal Teknologi, 56, 165-174, 2011
31. Kasmani R.M., Andrews, G.E. and Phylaktou, H.N., The influence of vessel volume and equivalence ratio in vented gas explosions, Chemical Engineering Transactions, 19, 463-468, 2010.
32. Kasmani R.M., Andrews, G.E. and Phylaktou, H.N., Vented gas explosions in a cylindrical vessel with a relief pipe. Jurnal Teknologi Siri F, 51, 53-65, 2009.
33. Willacy, S.K., Ferrara, G.,\_Andrews, G.E., Phylaktou, H.N., Kasmani R.M., Stratified propane-air explosions of global concentration outside normal flammability limits. Chemical Engineering Transaction, 185-190, 2006
34. Sulaiman, W.Z.W and Kasmani, R.M.\*, Explosibility Characteristics of Phillipine Coal Dust, Journal of Applied Sciences (2014), 14 (13), p. 1469-1472. DOI : 10.3923/jas.2013, ISSN :1812-5654
35. Mat Kiah, M.H. and Kasmani, R.M., Experimental study of gas explosion in closed pipe, Journal of Applied Sciences (2014), 14 (13), p. 1409-1414. DOI : 10.3923/jas.2013, ISSN :1812-5654

#### **REFERRED PROCEEDINGS/CONFERENCE**

1. Zaidi, H.F.M and Kasmani, R.M., Investigation Numerical investigation on laminar burning velocity of hydrogen-methane/air mixtures: A review, 27th Symposium of Malaysian Chemical Engineers (SOMChE 2014) in conjunction with the 21st Regional Symposium on Chemical Engineering (RSCE 2014), 29 – 30 Oct, 2014, Taylor's University Lakeside Campus, Selangor Darul Ehsan, Malaysia.
2. Sulaiman, S.Z, Kasmani, R.M., Mustafa, A., Experimental study on the effect of curved tube of premixed hydrogen-air explosion, 27th Symposium of Malaysian Chemical Engineers (SOMChE 2014) in conjunction with the 21st Regional Symposium on Chemical Engineering (RSCE 2014), 29 – 30 Oct, 2014, Taylor's University Lakeside Campus, Selangor Darul Ehsan, Malaysia.
3. Sulaiman, S.Z, Kasmani, R.M., Mustafa, A., Experimental studies on premixed hydrogen/air explosion in closed pipe, Tenth International Symposium on Hazards, Prevention and Mitigation of Industrial explosions, June 10-14, 2014, Bergen, Norway.
4. Sulaiman, S.Z, Kiah, M.H.M, Kasmani, R.M., Mustafa, A., Experimental and numerical study on methane/hydrogen-air mixtures explosion in 90 degree bend pipe, Tenth International Symposium on Hazards, Prevention and Mitigation of Industrial explosions, June 10-14, 2014, Bergen, Norway.
5. Fakandu, B, Kasmani, R.M., Andrews, G.E., Phylaktou, H.N.,The Venting of Hydrogen-Air Explosions in an Enclosure with L/D=2.8, Tenth International Symposium on Hazards, Prevention and Mitigation of Industrial explosions, June 10-14, 2014, Bergen, Norway.
6. Sulaiman, S.Z, Kasmani, R.M., Mat Kiah, M.H., Kidam, K, Hassim, Experimental Study of Premixed Hydrogen/Natural Gas Mixtures in Closed Pipe, 1st CCPS Asia-Pacific Conference on Process Safety, September 4-5, 2013, Kempinski Hotel, Qingdao, ChinaFast Turbulent flames in duct vented gas

- explosion, 11th International Conference on Chemical & Process Engineering, 2-5 June 2013 - Milan, Italy
7. Kasmani, R.M., Andrews, G.E., Phylaktou, H.N., Ibrahim, N., Ali, R.R., Experimental investigation of vessel volumes in vented explosions, World Academy of Science, Engineering and Technology, Lucerne, Switzerland, 16-18 October 2012.
  8. Ibrahim, N., Jensen, P.A., Dam-Johansen, K., Ali, R.R., Kasmani, R.M., Influence of reaction temperature and water content on wheat straw pyrolysis, World Academy of Science, Engineering and Technology, Lucerne, Switzerland, 16-18 October 2012.
  9. Kasmani, R.M., Andrews, G.E., Phylaktou, H.N., Ibrahim, N., Ali, R.R., Fast Turbulent Flames and High Overpressures in Duct-Vented Gas Explosion, Proceeding in 26th Symposium of Malaysian Chemical Engineers (Somche-2012) – International Conference on Chemical and Bioprocess Engineering (ICCBPE-2012) , Kota Kinabalu, Sabah, 21-23 November 2012.
  10. Kiah, M.H.M, and Kasmani, R.M., Gas explosion in closed pipe with and without 90 degree bends, Proceeding in 26th Symposium of Malaysian Chemical Engineers (Somche-2012) – International Conference on Chemical and Bioprocess Engineering (ICCBPE-2012) , Kota Kinabalu, Sabah, 21-23 November 2012.
  11. Sulaiman, W.Z.W and Kasmani, R.M., Explosibility and physical characteristics of Philippine Coal dust, Proceeding in 26th Symposium of Malaysian Chemical Engineers (Somche-2012) – International Conference on Chemical and Bioprocess Engineering (ICCBPE-2012) , Kota Kinabalu, Sabah, 21-23 November 2012.
  12. Fakandu, B, Kasmani, R.M., Andrews, G.E., Phylaktou, H.N.,Explosion Venting and Mixture Reactivity Influences in a Small Vessel, 23<sup>rd</sup> International Colloquium on the Dynamics of Explosions and Reactive System, University of California, Irvine, 24 – 29 July, 2011.
  13. Kiah, M.H.M, and Kasmani, R.M., Study on explosion properties in closed pipe. ICCEIB -SOMChE 201, Universiti Malaysia Pahang, Kuantan, 28<sup>th</sup> November to 1<sup>st</sup> December 2011
  14. Sulaiman, W.Z.W and Kasmani, R.M., An overview of explosion severity on dust explosion. ICCEIB -SOMChE 201, Universiti Malaysia Pahang, Kuantan, 28<sup>th</sup> November to 1<sup>st</sup> December 2011
  15. Kasmani, R.M., Andrews, G.E., Phylaktou, H.N.,Vented gas explosions: Effect of vessel volume and equivalence ratio. Chemeca 2010, Adelaide, 26 – 29 September 2010.
  16. Fakandu, B, Kasmani, R.M., Andrews, G.E., Phylaktou, H.N.,Vented gas explosions in small vessels with an L/D of 2. 6<sup>th</sup> International Seminar on Fire and Explosion Hazards, Leeds, UK. 11-16 April 2010. pp. 659-670. doi:10.3850/978-981-08-7724-8\_10-02
  17. Kasmani, R.M., Andrews, G.E., Phylaktou, H.N., Influence of static bursting pressure and ignition position on duct vented gas explosions. Proceeding of the 5th International Seminar on Fire and Explosion Hazards, Edinburgh, UK, pp. 255-264, 2008
  18. Kasmani, R.M., Andrews, G.E., Phylaktou, H.N., The influence of vessel volume and equivalence ratio of hydrocarbon/air mixtures in vented explosions. 4th International Conference on Safety and Environment in Process Industry, Italy. 14 -17 March 2010.
  19. Kasmani, R.M., Andrews, G.E., Phylaktou, H.N.,Vented explosion with a vent duct twice the diameter of the vent in a vessel with an L/D of 2: Extremely fast turbulent flames and high overpressures in vented gas explosion ducts. 4th European Combustion Meeting (ECM), Vienna, Austria, 14 – 17 April 2009.
  20. Kasmani, R.M., Andrews, G.E., Phylaktou, H.N.,Hydrocarbon/air in vented gas explosions. 3<sup>rd</sup> European Combustion Meeting (ECM), Chania, Crete, 11- 13 April 2007.
  21. Kasmani, R.M., Andrews, G.E., Phylaktou, H.N., Willacy, S.K., Influence of static burst pressure and ignition position on duct vented gas explosions. 5th International Seminar on Fire and Explosion Hazards. 23 – 27 April 2007.
  22. Kasmani, R.M., Andrews, G.E., Phylaktou, H.N., Self-accelerating gas flames in large vented explosion volumes that is not accounted in current vent design. 2nd International Conference on Safety and Environment in Process Industry, Italy. 21-24 May 2006.

## **CONFERENCES/PROCEEDING**

1. Numerical Investigation On Laminar Burning Velocity Of Hydrogen-Methane/Air Mixtures: A Review, 3<sup>rd</sup> Conference on Emerging Energy and Process Technology 2014 (CONCEPT 2014), PNB Ilham, Port Dickson, 3 – 4 Dec 2014
2. Flame propagation and DDT for highly reactive combustible mixture in closed pipe with L/D 51, 3<sup>rd</sup> Conference on Emerging Energy and Process Technology 2014 (CONCEPT 2014), PNB Ilham, Port Dickson, 3 – 4 Dec 2014
3. The influence of 90 degree bends in closed pipe system on the explosion properties using hydrogen-enriched methane, 2<sup>nd</sup> Conference on Emerging Energy and Process Technology 2013 (CONCEPT 2013), Lotus Hotel, Desaru, Johor, 3 – 4 Dec 2014

#### **SEMINARS/WORKSHOPS**

1. Facilitator of Emergency Response Planning Workshop, 17 -18 August 2004, CEPP FKKSA, UTM
2. Fasilitator of Workshop on Safety Awareness Program, FKK, Universiti Teknologi Malaysia, 17 – 29 Oct 2012

#### **THESIS**

1. Kasmani, R. M (2009). Vented gas explosion. PhD. Thesis, University of Leeds
2. Kasmani, R. M (2004). Study the influence of gunpowder as an ignition source on the dust-air explosion and the comparison on its effectiveness to other ignition sources. Master Thesis, University of Leeds.
3. Miss Hashimawaty Mat Kiah, Rafiziana Md.Kasmani (2013), Premixed Flame Acceleration in Straight and Bend Closed Pipe, MSc Thesis, UTM
4. Wan Zaiton Wan Sulaiman, Rafiziana Md.Kasmani (2014), Explosion Sensitivity and Severity of South East Asia Coals, MSc Thesis, UTM

#### **BOOK CHAPTER**

1. Fakandu, B, Kasmani, R.M., Andrews, G.E., Phylaktou, H.N. , Vented gas explosions in small vessels with an l/d of 2. Proceedings of the 6th International Seminar on Fire and Explosion Hazards, Leeds, UK, p. 659-670, 2011. ISBN: 978-0-9557497-2-8.
2. Kasmani, R.M., Andrews, G.E., Phylaktou, H.N., Willacy, S.K., Influence of static bursting pressure and ignition position on duct vented gas explosions. Proceeding of the 5th International Seminar on Fire and Explosion Hazards, Edinburgh, UK, p. 255-264, 2008. ISBN: 978-0-9557497-2.
3. Z Zakaria, M Nor, S Husna, R.Md Kasmani, Endocrine disrupting compounds in wastewater: the challenges and its removal options. Advanced Gas Technology (Vol I & II). Penerbit UTM , Johor, p. 193-218, 2007. ISBN 978-983-52-0598-9
4. Z Zakaria, M Nor, S Husna, R Md Kasmani, Integrity study of liquefied petroleum gas (LPG) in petrochemical industries due to corrosion and settlement. Advanced Gas Technology (Vol I & II). Penerbit UTM , Johor, p. 131-146, 2007. ISBN 978-983-52-0598-9

#### **EXPERT REPORT**

1. Rahmat Mohsin, Zulkifli Majid, Azeman Mustafa, Rafiziana Md.Kasmani, Zalilah Shaher, ‘Study on Effectiveness of Commercial and Residential Natural Gas Odorization System in peninsular Malaysia’. Report submitted to Energy Commissioner, Feb 2013.
2. Anwar Johari, Arsad Ahmad, Rafiziana MdKasmani, Tuan Amran Tuan Abdullah, Aisyah Jalil, Nazlina Ya’aini, “Kajian impak perundangan [regulatory impact assessment (ria)] terhadap potential threats di dalam integrity management plan dalam sistem talian paip petroleum dan penyeliaan pihak berkuasa memeriksa ketiga terhadap keseluruhan aktiviti-aktiviti rekabentuk, pemasangan,

- pemeriksaan, pengujian dan pentauliahan talian paip petroleum”. Report submitted to Kementerian Sumber Manusia- DOSH Malaysia, Sept 2014.
3. Arsad Ahmad, Wijayanuddin, Anwar Johari and Rafiziana Md.Kasmani, Final Report of Risk Assessment on Jomalina Nuri and KCP, Klang to RHB Risk Insurance, Dec 2012.

#### **OTHER PUBLICATIONS**

1. **Kasmani, R.M.**, Fire and Explosion Safety, Workshop on Safety Awareness Program, September 2012, Universiti Teknologi Malaysia.
2. **Kasmani, R.M.**, Environment and Occupational Toxicology, Open University Malaysia, January 2013
3. **Kasmani, R.M.**, Occupational Safety and Health Management, Open University Malaysia, September 2012
4. **Kasmani, R.M.**, Plant and Construction Safety, Open University Malaysia, September 2012
5. **Kasmani, R.M.**, Industrial hygiene , Open University Malaysia, September 2012
6. **Kasmani, R.M.**, Risk assessment for Laboratory practise – Combustion and Flow system laboratory, Department of Gas Engineering, Universiti Teknologi Malaysia (2009).
7. **Kasmani, R.M.**, Fire and explosion engineering: The overview, Universiti Pahang Malaysia (UMP), September 2010.
8. **Kasmani, R.M.**, Occupational Health and Safety , CEPP/UTM, April 2004

#### **INVITED/GUEST SPEAKER**

1. Speaker for Workshop on Safety Awareness Program, Universiti Teknologi Malaysia, Sept 2012
2. Expert Speaker on *Workshop On Design For Safe Handling Of Industrial Chemicals for UPM* Master Program, Cyberview Lodge and Spa, Cyberjaya 8-10 April 2013.
3. Invited Guest for Bengkel: *Study on Effectiveness of Commercial and Residential Natural Gas Odorization System in peninsular Malaysia*’ for Energy Commissioner, Companies and Residents, Ibu pejabat Suruhanjaya Tenaga, Putrajaya, 29 Oct 2013.
4. Invited speaker on **‘Fire and explosion engineering: The Overview’** for final year student in **Universiti Malaysia Pahang (UMP)** in March 2010.
5. Facilitator for ‘Active and Cooperative Learning’ for CTL (Center for Teaching and Learning), UTM, 2010.
6. Invited Speaker for poster presentation at **IChemE Meeting, Bradford, 2007. Topic on ‘ Fire and Explosion : Safety and Regulation’**
7. Invited Speaker for School of Process, Material and Environmental Engineering (SPEME), **University of Leeds Centenary Day, 2006. Topic on ‘ Vented explosions’**
8. Speaker for Short Course Training in **Occupational Health and Safety** organized by GASTEG/CEPP/UTM on Fire and Explosion. 2004