

Half-Day Talk on “Influence of Material Composition on Flame Spread Behaviour over Combustible Solid of Paper/Bagasse”

Date : Saturday, 4th May 2019
Venue : IEM (Southern Branch) Training Centre, 24-B Jalan Abiad, Taman Tebrau Jaya, Johor Bahru
Speaker : Dr. Mohd Azhari Razali, UTHM

Synopsis

In worldwide, destruction of properties is mainly caused by fire. Statistics from the Fire and Rescue Department of Malaysia (JBPM) is reported that about 33,640 of fire cases had been reported for the year 2013. Instead of this, fire destruction of the building and its content also represents main contributor in total cases in Malaysia.

Paper can be described as a thin material that produced by pressing a moist fiber pulp cellulose which derived from the wood. This activity will damage the ecosystem of the earth if there any actions to replant the trees or rules. Due to this awareness, a lot of researches have been done using other fibers such pineapple fiber, banana tree fiber, palm fiber and other as an alternative fiber of the paper. Recently, production of paper composed of a natural mixture has been made. Unfortunately, these studies are focused only on the mechanical properties of composite paper and focus on the mechanical properties of the paper only. Instead of mechanical properties, the study about the behavior of flame spread is also essential for fire safety engineering; which still lack of attention to be carried out. Inspiration from this, the behavior of downward flame spread over paper/bagasse is experimentally investigated. Composition of 0%, 30%, 50%, 70% and 100% bagasse are chosen for this research.

Flame spread behavior for each composition is analyzed from the observation. Results show for each composition, the flame spreads with “U” shape at the beginning of combustion until the whole specimen. The result shows that the flame spread rate decreases as bagasse composition increases. The highest flame spread is 0.813 mm/s for pure paper and the lowest one is 0.481 mm/s for pure bagasse. Not only that, it also shows the flame spread rate decreases as the density increases. It is clarified that density for bagasse is higher than paper. Result infers that the flame spread shape and rate are not only influenced by the bagasse composition but also by the density.

The main objective of this technical talk course is to provide some exposure and a better understanding for our young engineers and practicing engineers to get some insight on the above topic.

Time	Tentative Program
8.30 a.m. – 9.00 a.m.	Registration
9.00 a.m. – 9.10 a.m.	Welcome Speech by IEM Southern Branch Organizing Committee
9.10 a.m. – 10.30 a.m.	Session 1: Influence of Material Composition on Flame Spread Behaviour Part 1
10.30 a.m. – 10.45 a.m.	Coffee Break
10.45 a.m. – 12.00 p.m.	Session 2: Influence of Material Composition on Flame Spread Behaviour Part 2
12.00 p.m. – 12.30 p.m.	- Discussion - Question and Answer Session
12.30 p.m.	

Speaker Biodata

Dr. Mohd Azahari Bin Razali received his bachelor’s degree in Mechanical Engineering from Universiti Teknologi Malaysia (UTM) in 2006. In year 2007, he started his career as an academican in Universiti Tun Hussein Onn Malaysia (UTHM). In 2008, he pursues a master’s degree in Mechanical Engineering from Nagaoka University of Technology, Japan, by researching on flame spread behavior over fabric and graduated in 2010. He continues a PhD in the field of thermophoresis phenomenon and graduated in 2013 from the same university. He is currently a Senior Lecturer at the Department of Energy and Thermo Fluid Engineering at the Universiti Tun Hussein Onn Malaysia. He is also holding a post as the Head of Centre for Energy and Industrial Environment Studies (CEIES) in the Faculty of Mechanical and Manufacturing Engineering. Among his research interests are in green technology, fire safety and combustion control.

Participant Fees:

Grade	Online	Normal
IEM Corporate Member & Graduate Members (30 years and above)	RM 110.00	RM 130.00
IEM Senior Engineers (60 years and above)	RM 90.00	RM 110.00
IEM Graduate Members (Below 30 years)	RM 90.00	RM 110.00
IEM Student Members	RM 60.00	RM 80.00
	RM 180.00	RM 200.00

Closing Date: 30th April 2019

For **ONLINE REGISTRATION**, payment **MUST BE MADE VIA ONLINE PAYMENT** (bank-in the participant fees into the Institution's Maybank Current Account (No. 5-013920-15708) before the **closing date**.

Registration will be on a first-come-first-serve basis. Kindly return the Reply Slip to the IEM (SB) office before **30th April 2019** together with a non-refundable cheque for the participant fees made payable to **The Institution of Engineers, Malaysia (Southern Branch)**. Alternatively, you could bank-in the participant fees into the Institution's Maybank Current Account (No. 5-013920-15708), and to facsimile both the Bank-in and Reply Slips to the Institution. The Institution requests all members co-operation in ensuring fees are paid in advance to the seminar. Please also be reminded that fees will not be refunded to absent participants who have paid, and to also note that all reservations must be paid despite participant cancellations. Thank you for your continuous support of the Institution.

Chairman, Sub-Committee on Seminar and Technical Talk, IEM (SB)

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Saturday, 4th May 2019, 9.00 a.m. – 12.30 p.m. at the IEM (Southern Branch) Training Centre, Johor Bahru

I wish to attend the above talk. I enclosed herewith a cheque No. for the amount of RM.....as payment for the seminar fee.

Name of Member: Membership No:.....

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