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## 東海大學 函

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受文者：新竹市立建功高級中學

發文日期：中華民國107年5月8日  
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速別：普通件  
密等及解密條件或保密期限：

附件：附件一：2017活動報導、附件二：參賽說明、附件三：參展報名用、附件四：參賽報名用(附件一2017活動報導.pdf、附件二參賽說明.docx、附件三參展報名用.docx、附件四參賽報名用.docx)

主旨：本校理學院謹定於本(107)年11月1日(星期四)至5日(星期四~一)組團前往馬來西亞參與由拉曼大學主辦「科學博覽會(KLESF Science Fair 2018)」，敬邀貴校選派師長及同學參加，敬請查照惠復。

說明：

- 一、本校理學院為培養學生對於學習科學的興趣與素養，引導學生了解科技，讓師生能更加深入科技相關知識，同時讓各國師生能透過科學博覽會(KLESF Science Fair 2018)進行科學知識交流以及科學專題的協作，特與馬來西亞拉曼大學合作，組團前往馬來西亞參與「科學博覽會(KLESF Science Fair 2018)」。
- 二、KLESF年度科學博覽會。第一屆科學博覽會係始舉辦於103年。在第四屆的106年，為期3天的活動中，博覽會接待了6萬多名參觀者。活動內容包括國際科學參賽、實際操作/示範簡單的科學實驗、科學工作坊、科學魔術表演等。參

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有附件



加的國家包括緬甸、菲律賓、泰國、印尼、柬埔寨、香港及中國。(附件一)

三、科學博覽會 (KLESF Science Fair 2018)詳細資訊：

四、自費部分：往返機票；住宿四天、活動期間(三天)的三餐、機場接送以及當地交通等費用，計500馬幣(約台幣3770元)；另有活動期間以外之自身支出等。

五、若需住宿星級飯店，將委託旅行社代訂，每晚約2600台幣。(詳情請見附件三、四)

正本：各公私立高級中學

副本：本校理學院、管理學院企業管理學系周瑛琪教授

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日期： 107年5月10日

單位： 教務處

- 一、上網公告。
- 二、有意願者協助報名。

第一層決行	
承辦單位	決行



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摘要：一、上網公告。

### — 批核軌跡及意見 —

1. 新竹市立建功高級中學教務處設備組長 王本銘：107/05/10 16:27:33  
承辦意見：
2. 新竹市立建功高級中學教務處教務主任 簡世欣：107/05/10 16:34:22 【教學組長 王蕾  
雲 代理】  
批示意見：
3. 新竹市立建功高級中學秘書室(代校長批核)校長室秘書 簡淑敏：107/05/11 10:21:44  
批示意見：如擬
4. 新竹市立建功高級中學教務處設備組長 王本銘：107/05/12 08:56:06  
承辦意見：



### — 欄位批核紀錄 —

### — 貼紙備註資訊 —

## 附件一

### 2017 年吉隆坡工程科技與科學展達 6 万人次

(加影 20 訊) 為了提升學生對於科學,科,工程和數學(STEM)的興趣,吉隆坡工程科技與科學展(KLESF)與 2017 年 11 月 3 日之 5 日在馬來西亞雪州綠野國際會展中心(MIECC)盛大舉行三天的博覽會,此博覽會吸引了 6 萬人次到訪。

KLESF 自 2013 年起由東盟工程及科技學院 (AAET)、拉曼大學 (優大)、馬來西亞政府-工業高科技集團 (MIGHT) 及馬來西亞工程師協會 (IEM) 聯辦,並免費開放訪給大眾參與,通過多樣的活動和計劃推廣 STEM 教育以及激發中小學生對 STEM 的興趣。

大會邀請了首相署部長拿督斯裡南茜蘇克利主持開幕儀式。出席開幕典禮的嘉賓包括馬來西亞政府-工業高科技集團會長丹斯裡阿末達祖丁阿裡高級院士、KLESF 聯合會長拿督洪禮壁及拿督莫哈末尤索夫、東盟工程及科技學院主席兼拉曼大學校長拿督蔡賢德教授高級院士、馬來西亞工程師協會主席陳燕振博士、全國教授理事會 (MPN) 主席拿督拉杜安教授、KLESF 籌委會會長李仕偉教授等。

拿督洪禮壁致開幕詞時表示, "KLESF 的願景時希望促進兒童對 STEM 教育的興趣、培訓教育者,以及提高大眾對 STEM 在社會經濟、福祉和可持續發展領域中的重要性的醒覺意識。我們相信著個博覽會是學生探索新的挑戰和發現的良好學習平臺,同時也將為校方、教育工作者、公共與私人界提供有關於 STEM 領域的項目、課外活動和良好實踐的資訊和經驗的交流機會。我也想藉此機會敦促各位家長能夠與我們一同鼓勵子女們學習 STEM, 因為 STEM 就是我們孩子未來的職業中扮演著舉足輕重的角色, 特別是即將來到的第四次工業革命。 "

丹斯裡阿末達祖丁阿裡強調了推動 STEM 教育以適應未來行業的需求和挑戰的重要性,他表示, 「KLESF 符合了馬來西亞要成為更具競爭力國家,同時在創新、創意和社區發展等諸多方面取得進一步發展的願景。隨著機器人技術、人工智慧和物聯網等先進技術的興起,我們將看到為所有行業帶來影響的變革。因此,為了面對未來的種種挑戰,我們需要通過這類的教育平臺及各方的支援來協助孩子們掌握必要的技能,以迎合未來的需求。」

拿督斯裡南茜蘇克利在主題演講中表示, 「STEM 教育創造了重要的思想家、提高了科學素養,並孕育了新一代的創新者。創新造就了維繫我國經濟的新產品與工藝。創新和科學素養高度依賴 STEM 領域的知識,而顯然的未來的大部分工作則需要對數學和科學有基本的瞭解。目前,國家轉型倡議或 TN50 正在積極地實施國家的長遠發展,其中包括經濟表現、創造力、創新和社區的福祉等方面的全面發展。因此,國家需要我們在科技創新方面盡一份綿力,以克服未來的種種挑戰,進而成為一個發達的國家。」

今年的 KLESF 博覽會也更具互動性和趣味性,以提供家長、學生和公眾更多更有趣的活動,並讓出席者通過這些活動進一步瞭解 STEM。這屆的博覽會也獲得了逾 50 家 STEM 相關行業的企業單位、逾 40 所大學、政府和非政府機構以及約 298 所國內各地的學校參與。另外,優大的教職人員及學生也在博覽會也進行逾 40 項實驗和展示以及 23 個 STEM 工作坊。

在為期三天的博覽會裡，重點活動包括由馬來西亞工程師協會所舉辦的第二屆國際青少年 Chem-E 車子設計比賽（由學生設計，以可重複使用和回收的材料製成的小型汽車）；KLESF 挑戰賽（一個國際性的比賽，旨在讓學生們展出他們的原創構思與發明）；全國科學、科技及工程發明比賽（一個由教育部為學校所舉辦的年度科學比賽）；以及 Cytron Technologies Sdn Bhd 舉辦的年度 RAC' 17 ero 比賽。

在馬來西亞通訊及多媒體委員會（MCMC）的展覽攤位也能夠體驗許多有趣的實踐活動，而其中的展覽及工作坊也和 Mymakers、物聯網（IoT）、數碼化生活、虛擬實境（VR）、電子設計、無人飛機等有關。除此之外，拉曼大學的實踐實驗活動以及由大馬腦力認知協會（MMLM）所舉辦的第十三屆大馬腦力盛會也提供了多項關於科學與科技的實用性的實驗及應用。此次博覽會也非常重視由學校與企業所展出的 STEM 展覽及工作坊、STEM 校內計畫以及科學魔術的表演。

KLESF 2017 獲得了比往年更多的到訪人數，參與者除了來自國內的學校、大學和機構之外，也來自中國、柬埔寨、香港、印尼、緬甸和泰國。KLESF 挑戰賽更獲得了超過 300 支由學校所組成的隊伍的參與。值得一提的是，參賽的學生們都在比賽中發揮了各自的獨特創造思維及發明。

來自印尼的學生娜菲拉蒂妮拉和拉蒂塔受訪時表示，我們感到非常高興能夠再次造訪馬來西亞。通過分享我們所創造關於 STEM 的發明，我們結識了許多來自其他國家的同伴，也從中學習到許多新的事物。

來自香港的老師黃鶴樓表示，「馬來西亞的政府、學校及籌辦組織非常重視 STEM 教育的態度，如籌辦及推展各種關於 STEM 教育的活動給予了我非常深刻的印象。另外，我和我的學生感到非常高興能夠有機會在這次的活動中認識了來自不同地方和文化背景的師生。」

優大資訊與通訊科技學院講師黃汝安和蘇小慧受訪時表示，「這個博覽會提供了我們師生以寓教於樂的方式為大眾傳授知識的機會。我們通過簡單的遊戲，而非授課方式來指導參與者基本的程式設計技巧，讓各年齡層的民眾都能夠在玩樂的同時學習到更多的程式設計知識。」

其中一位活動助理，來自優大醫學系的學生梅麗莎表示，「這個博覽會讓我有機會向大眾分享我在課堂的所學，並在提高日常醫療意識方面發揮了作用。」

第二屆國際青少年 Chem-E 車子設計比賽頒獎典禮于博覽會第二天舉行。典禮主賓副教育部長拿督卡馬拉納登致詞時表示，這類比賽能夠評估學生對 STEM 科目的興趣，並且強調這項比賽應該讓各年齡層的學生參與，以鼓勵他們在未來選擇入讀理科班。另外，他非常讚賞 KLESF 這項年度活動，不僅協助政府推廣 STEM 教育，更造福莘莘學子。STEM 是創造一個更加智慧化社會的重要關鍵，不僅在學術上，而且馬來西亞也是一個以技能為基礎的社會。

李仕偉教授在閉幕典禮上代表 KLESF 全體人員感謝各方的鼎力支援和協助，造就了本次博覽會的成功舉辦。馬來西亞政府一工業高科技集團資深副主席拉斯蘭博士表示，「KLESF 和所舉辦的相關比賽展示了如何成功向全民推廣 STEM 教育，有助於確保我國逐步成為一個更加以 STEM 為導向的社會。」

KLESF 是 Science To Action (S2A) 由首相所于 2013 年計畫倡議的專案。它旨在將 STEM 領域主流化、加強發展工業、人民福祉及科學、工藝與業界的應用科學和技術，也是我國以創新和技術作為國家發展戰略的改革舉措之一。

KLESF 旗下也進行了各樣推廣 STEM 教育的其它專案如 KLESF 學長計畫 (KLESF Mentorship Programme)、KLESF 導師培訓(KLESF Mentor Development) 和科學教育研討會 (Symposium of Science Education)，常年的耕耘培養了更高效的 STEM 教育。此外，KLESF 也於今年 8 月 20 至 26 日于優大金寶校區，首次在馬來亞舉辦了亞洲科學營 (Asia Science Camp，ASC)。

贊助本屆 KLESF 博覽會的有 Silverlake, The HEAD Foundation Ltd, KL Kepong Bhd, 郭氏基金 (Kuok Foundation), Intel, Bayer Co. (Malaysia) Sdn Bhd, Little Rain Children Trust, Rolls-Royce, 馬來西亞物理學院 (IFM), 金寶大酒店 (Grand Kampar Hotel), RedONE, LEGOLAND® Malaysia Resort, Combiz (M) Sdn Bhd, Corpacer Malaysia Sdn Bhd, DOS Fortified Sdn Bhd, TM 及 Edasu Hiromori Sdn Bhd.

KLESF 2017 是由馬來西亞科學院(ASM)、馬來西亞教育部 (MOE)、馬來西亞科學技術與創新部 (MOSTI)、MCMC、馬來西亞中華總商會 (ACCIM)、IFM 及國家教授理事會(MPN)鼎力支援。



南茜蘇克利 (左三) 在蔡賢德 (左起)、拉杜安、洪禮壁、莫哈末尤索夫、阿末達祖丁阿裡和陳燕振的陪同下為 KLESF 2017 揭開序幕。







博覽會中的活動多姿多彩，吸引了各年齡層民眾的參與。



學生展示各自的發明和作品。



卡馬拉納登表示非常讚賞 KLESF 這項年度活動，不僅協助政府推廣 STEM 教育，更造福莘莘學子。



## KLESF: The Fair 2017



From left: Prof Chuah, Datuk Raduan, Dato' Sri Hajah Nancy, Datuk Hong, Datuk Mohd Yusoff, Tan Sri Ahmad Tajuddin and Dr Tan at the opening ceremony of the KLESF: The Fair 2017

With the goal to encourage school students' interest in Science, Technology, Engineering and Mathematics (STEM) subjects, the Kuala Lumpur Engineering and Science Fair (KLESF) staged another comeback at the Mines International Exhibition and Convention Centre (MIECC) from 3 to 5 November 2017.

The KLESF: The Fair 2017 is a significant initiative which encompasses various programmes and activities with the aim to promote interest in STEM particularly among primary and secondary school students. The fair was open to the public, with free admission.

Align with its objective, the fair was jointly organised by ASEAN Academy of Engineering and Technology (AAET), UTAR, Malaysian Industry-Government Group for High Technology (MIGHT) and the Institution of Engineers Malaysia (IEM).

Officiating the opening ceremony of the KLESF: The Fair 2017 was Minister at the Prime Minister's Department-cum-the minister in charge of MIGHT Dato' Sri Hajah Nancy binti Haji Shukri. Also present at the opening ceremony were MIGHT Chairman Tan Sri Dr Ir Ahmad Tajuddin Ali; KLESF Steering Committee Chairman Ir Academician Datuk Hong Lee Pee; KLESF Steering Committee Co-Chairman and MIGHT Chief Executive Officer Datuk Dr Mohd Yusoff Sulaiman; AAET and UTAR President Ir Prof Academician Dato' Dr Chuah Hean Teik; IEM President Ir Dr Tan Yean Chin; National Council of Professors (MPN) President Prof Datuk Dr Raduan Che Rose; KLESF Organising Committee Chairman and UTAR Vice President for R&D and Commercialisation Prof Ir Dr Lee Sze Wei; invited guests, partners, sponsors, schools, universities, participants and the public



Datuk Hong speaking about the purpose of KLESF

Speaking at the opening ceremony, Datuk Hong emphasised, “It is the KLESF’s aspiration to promote children’s interests in STEM education, to train the educators and to raise public awareness on the importance of STEM in socio-economic, well-being and sustainable development. We also believe the fair is a good learning platform for the students to explore new challenges and discoveries. The activities will provide networking opportunities for the schools, educators, industries as well as the public and private sectors to share information and experience on projects, extra-curriculum and good practices in the STEM field. I would also like to take this opportunity to urge the parents to join us in encouraging STEM learning to their children. It is crucial for all of us to realise the potential of STEM in leading our children to their future careers, particularly as we are about to enter the fourth industrial revolution.”



Tan Sri Ahmad Tajuddin

emphasising on the importance of STEM education

Echoing Datuk Hong’s opening remark, Tan Sri Ahmad Tajuddin underlined the importance of promoting STEM education to match the needs and challenges of the future industry. He said, “KLESF is in line with the country’s aspiration to become a more competitive nation and to progress further in many aspects such as innovation, creativity and community

development. It is important for everyone in the country to understand what the future holds for our children upon the arrival of the fourth industrial revolution. We will see the transformations that affect all sectors with the rise of more advanced technology such as robotics, artificial intelligence and Internet of things (IoT). Therefore, there are many challenges ahead and we need to equip our children with the necessary skills to cater to the future needs through this kind of educational platform with support from all parties.”



Dato' Sri Hajah Nancy addressing STEM's roles in facing future challenges

Dato' Sri Hajah Nancy Shukri said in her keynote address, “STEM education creates critical thinkers, increases science literacy and enables the next generation of innovators. Innovation leads to new and improvised products and processes that sustain our economy. Innovation and science literacy highly depend on knowledge in the STEM areas. It is clear that the majority of the jobs in the future will require a basic understanding of maths and science. Now, the national transformation initiatives or TN50 are actively being implemented for long-term development of the country. Malaysia's aspiration towards TN50 is comprehensive, encompassing economic performance, creativity, innovation and the well-being of the community. Therefore, Malaysia's ability in the science, technology and innovation relies on our shoulders in order to overcome challenges of the future as well as to become a developed country.”

As KLESF: The Fair 2017 set its fourth comeback, it was more interactive and fun with more interesting activities for parents, students and the public to familiarise themselves with STEM and its related activities. This fair also received active participation, with booths from more than 50 STEM-related industry corporations, 40 universities, non-government organisations and government organisations, and about 298 school teams from various parts of the country. There were more than 40 science experiments and demonstrations and 23 STEM workshops conducted by the UTAR faculty academics, staff and students during the fair.

Some of the event highlights at the three-day fair included Second International Junior Chem-E Car Competition by IEM where students designed small-sized car that was fabricated from reusable or recyclable materials; the KLESF Challenge, a STEM

international competition where students exhibit their original inventions and creations; *Pertandingan Inovasi Sains, Teknologi dan Kejuruteraan Kebangsaan* (PISTEK) 2017, an annual Science competition organised by the Ministry of Education (MoE) for schools; and RAC'17 re-ro Annual Championship by Cytron Technologies Sdn Bhd. More fun hands-on activities were prepared at the MCMC Pavilion where exhibitions and workshops related to MyMakers, IoT, digital lifestyle, virtual reality (VR), electronic design and drones were made available for the public. Besides that, there were UTAR hands-on experiments and the [13th Malaysia Festival of The Mind](#) by the Malaysia Mental Literacy Movement, and many more offering the practical experience and applications of science and technology. The fair also encompassed STEM exhibitions and workshops by the industry and universities, school STEM projects and Science of Magic performances.



Hands-on activities such as science experiment for visitors from all walks of life





School students and children enjoying the activities and learning about STEM at the workshops

KLESF: The Fair 2017 saw growing participation inside and outside the country. Moreover, there were more than 300 entries consisting of school teams that were participating in the KLESF Challenge, most of them consisting of students' own STEM inventions and creations. Besides participants from local schools, universities and organisations, the fair also received international participants from ASEAN and other Asian economies including Mainland China, Cambodia, Hong Kong, Indonesia, Myanmar and Thailand.

Indonesian students Nafiladinaulia and Radita Pramestic Utami said, "We are very grateful to visit Malaysia again for the fair. We have met new friends and learnt new things from

peers from other countries by sharing our experience in creating STEM inventions.” Besides, school teacher Ng Ho Lo from Hong Kong commented, “We are impressed with the Malaysian government, schools as well as the fair organisers as they are taking STEM education very seriously by putting in much emphasis on STEM education through various initiatives. My students and I are also happy to meet teachers and students from different backgrounds and cultures.”

On the other hand, Managing Director of Bayer Malaysia Jennifer Yong remarked, “We are happy to participate in a fun platform that allows our employees to volunteer themselves for this kind of activity that encourages the interaction with children.” MCMC Director of Digital Lifestyle and Society John Tay said, “STEM is very critical to the younger generation. We offer various hands-on activities at the fair such as soldering and VR games to give children an early exposure to STEM so that they will look further into STEM in the future.” Rolls-Royce Production Support Lead Liu Yang said, “Besides sharing our experience in the industry with the students, we also relate the displays and projects at our booth to the concepts they learn in school to help them develop a more comprehensive idea on the knowledge that they have learnt.”

UTAR Faculty of Information Communication and Technology’s lecturers Ooi Joo On and Saw Seow Hui mentioned, “We teach the visitors basic programming skills through simple games instead of lectures so that people from all walks of life will be able to learn more about programming while having fun. It is also an opportunity for our faculty members and students to impart their knowledge to the public through edutainment.” A medical student from UTAR Faculty of Medicine and Health Sciences Melissa Ann Vannan who is also a helper at the fair said, “I have the opportunity to share what I have learnt in the university and to play a part in raising the awareness about daily healthcare.”

Wong Hieng Jiing, a teacher from Tunku Putra School, Kuching said, “KLESF is a good move to attract more students to learn about STEM. My students and their parents have been very excited about the fair as they are able to learn science outside of the books particularly through science projects.” School teacher Jayanthi Balakrishnan from SJK(T) Jalan Yahya Awal, Johor Bahru commented, “My students enjoyed the fair and the competitions very much. I am happy to see them gaining more interests and knowledge on STEM, and it is certainly a great experience for me and my students. We will come again next year.”

Cheng Suik Yieng said, “This is our third time joining the fair. My seven-year-old and nine-year-old like the hands-on workshops here very much, and ask me to come with them every year. It is all free, and more importantly, the majority of the activities here are conducted by young experts from different fields who also patiently guided my children in the activities and experiments.” Besides, father of a primary school child, Abdul Kudus Putra B. Manap shared, “The fair is an eye-opener for me especially to see my child showing interests in learning and



taking the initiative to participate in STEM-related competitions. This a good platform for parents to discover and appreciate our children’s talents that we are yet to realise.”



Students constructing small-sized car using recyclable materials



Winners of the Second Junior Chem-E Car Competition 2017



MyMaker Soccerbotz Competition



Winners of the rero Annual Championship RAC'17 at KLESF

A total of 34 teams from 14 primary schools competed in the Second International Junior Chem-E Car Competition which was hosted by Sekolah Kebangsaan Putrajaya Presint 18(1). The prize-giving ceremony was held on the second day of the fair with the presence of Deputy Minister of Education Dato' P. Kamalanathan representing the Minister of Education, IEM Vice President Ir Prof Dr Jeffrey Chiang Choong Luin, Datuk Hong and the competition's Organising Chairman Ir Dr Noor Yasmiza Yusoff. Dato' Kamalanathan spoke at the ceremony, "The competition gauges the students' interests towards STEM subjects and emphasis should be given to students at all levels to further encourage them to enrol in the science stream in school."

On the other hand, the prize giving ceremony for other competitions were held in conjunction with the closing ceremony of the KLESF: The Fair 2017. Present at the closing ceremony were Dato' Kamalanathan, MIGHT Senior Vice President Dr Raslan Ahmad, Datuk Hong, MoE Curriculum Development Division Deputy Director Datin Dr Ng Soo Boon, Prof Lee and MoE Educational Planning and Research Division Programme Evaluation Unit Head Dr Ihsan Ismail.



Prof Lee (left) and Dr Raslan Ahmad thanking all the guests, organisers, sponsors, industrial partners, supporters, schools, higher learning institutions and visitors for making the fair a success

In his closing remark, Prof Lee on behalf of KLESF thanked all parties for their support and effort in making the fair a successful event. He also announced, “I am glad to inform that KLESF: the Fair 2017 has received more than 60,000 visitors throughout the three days.”

Dr Raslan Ahmad said at the ceremony, “The fair and the competitions held here have shown us how to deliver STEM to people from all walks of life from the rural and urban areas. This will help to ensure our country is progressively becoming a more STEM-oriented society.”



Dato' Kamalanathan calling upon more industry players and prospective collaborators to join the initiative in promoting STEM education

At the closing ceremony, Dato' Kamalanathan applauded KLESF for organising the fair annually which complements the government's effort in promoting STEM among school students. He said, “STEM is an important key to creating a much more intelligent society, not only academically but also a skill-based community in Malaysia. The competitions are also great platform for the students to apply their STEM knowledge in addressing challenges and use the existing resources in creating new inventions.”

He added, “These hands-on activities are critical in complementing formal education in schools, whereas informal learning platforms involve the utilisation of new approaches to developing evidence-based understanding and alternative methods to enhance student participation to create a more meaningful STEM learning experience. Furthermore, there will be one million STEM-related job vacancies by 2020, which 50% are professional workers. Therefore, it is crucial to prepare our children with sufficient knowledge and strong foundation in STEM to match the future needs that require the high-end skills. I would like to also urge more participation from the industry, agencies and sponsors to provide more input as well as to avoid mismatch between the academia and industry.”

KLESF is an initiative in support of Science To Action (S2A) initiative announced by the Prime Minister in 2013 to mainstream the usage and understanding of science to the society and promote innovation and technology as one of the strategic reform initiatives for national development.

Under KLESF, other programmes such as the KLESF Mentorship Programme (KMP), KLESF Mentor Development Programme (KMD), and Symposium on Science Education (SoSE), have groomed educators to be more effective and efficient in teaching STEM to children. This year, the KLESF also hosted the [Asian Science Camp 2017](#) for the first time in Malaysia at the UTAR Kampar Campus from 20 to 26 August 2017.

The sponsors of KLESF: The Fair 2017 included Silverlake, HEAD Foundation Ltd, Kuala Lumpur Kepong Bhd, Kuok Foundation, Intel, Bayer, Little Rain Children Trust, Rolls-Royce, Institute Fizik Malaysia (IFM), Grand Kampar Hotel, RedONE, LEGOLAND® Malaysia Resort, Combiz (M) Sdn Bhd, Corpacer Malaysia Sdn Bhd, DOS Fortified Sdn Bhd, TM, and Edasu Hiromori Sdn Bhd.

The KLESF Fair is supported by the Academy of Sciences Malaysia (ASM), MoE Malaysia, Ministry of Science, Technology and Innovation (MOSTI), Malaysian Communications and Multimedia Commission (MCMC), the Associated Chinese Chambers of Commerce and Industry Malaysia (ACCCIM), IFM and MPN.

## KLESF: THE FAIR 2018 活動 9 大特點:

1. 國際參賽 KLESF INTERNATIONAL CHALLENGE 2018
2. 旅遊教學
3. 有別於其他國家舉辦的科學博覽會，即使學生沒有參與國際參賽 KLESF INTERNATIONAL CHALLENGE 2018，學生依舊可以在博覽會裡參加其他的項目，例如：
  - a) 由大學的講師/教授帶領實際操作/示範簡單科學實驗
  - b) 由大學的講師/教授帶領科學工作坊
4. 來自不同國家(緬甸，菲律賓，泰國，印尼，柬埔寨，香港，中國)的學生，老師參與. 學生有機會與他們互相交流
5. 學習科學知識
6. 學校，教育工作者，工業界，公營和私營部門分享有關科學教育的平台
7. 科學魔術表演
8. 可以獲取出席證明
  - a. 參與國際參賽 KLESF INTERNATIONAL CHALLENGE 2018 的學生將獲得參加證書
  - b. 沒有報名參與國際比賽的學生，可以參與現場的科學實驗與工作坊，完成這些工作坊，即可獲取參加證明
9. Rero Annual Championship
10. 非營利組織，政府相關機構，大學，非政府機構/組織，學院，企業，協會，MyMakers 科學展覽
  - Celcom
  - Muzium Telekom
  - Gamuda
  - Rolls-Royce Malaysia Sdn Bhd
  - Silverlake SPRINTS Sdn Bhd
  - Cytron Technologies Sdn Bhd
  - Intel Microelectronics (M) Sdn Bhd
  - Leeden Gases Sdn Bhd
  - Bayer Co. (Malaysia) Sdn Bhd
  - Legoland (M) Sdn Bhd
  - Petrosains Sdn Bhd
  - Shandong Yuanda-Ilongwill Educational Science and Technology Ltd.
  - Hakko Products Sdn Bhd
  - Sungate Universal Sdn Bhd
  - DreamEDGE Sdn Bhd
  - Brain Bytes Sdn Bhd
  - MTC Floating Solutions Sdn Bhd
  - Star Media Group Berhad
  - British Council Malaysia
  - Agensi Nuklear Malaysia
  - Bahagian Direktorat Oseanografi Kebangsaan (NOD)
  - Bahagian Pusat Maklumat Sains Dan Teknologi (MASTIC)
  - Jabatan Meteorologi Malaysia
  - Lembaga Perlesenan Tenaga Atom (LPTA)
  - Malaysia Nuclear Power Corporation (MNPC)
  - Malaysian Industry-Government Group for High Technology (MIGHT)
  - Ministry of Natural Resources and Environment (NRE)
  - Suruhanjaya Komunikasi dan Multimedia Malaysia (MCMC)

- Pusat Nanoteknologi Kebangsaan
- Young Scientists Network-Academy of Sciences Malaysia (YSN-ASM)
- MeaSAT
- iM4U
- Malaysia Toray Science Foundation (MTSF)
- Malaysian Software Testing Board
- Malaysian Timber Certification Council
- Persatuan Intelktual dan Inovasi India Malaysia (PIIIM)
- Pertubuhan Origami Malaysia
- Science Bridge Academy
- Arus Academy
- City-University College of Science and Technology
- DRB-HICOM University of Automotive
- Infrastructure University Kuala Lumpur (IUKL)
- Institut Fizik Malaysia
- Institut Kimia Malaysia
- Institute of Materials Malaysia (IMM)
- Multimedia University
- National STEM Movement
- PERMATA Pintar
- Taylor's University
- The Institution of Engineers, Malaysia
- The University of Nottingham Malaysia Campus
- Tunku Abdul Rahman University College
- Universiti Malaya
- Universiti Pendidikan Sultan Idris (UPSI)
- Universiti Pertahanan Nasional Malaysia (UPNM)
- Universiti Putra Malaysia
- Universiti Teknikal Malaysia (UTEM) 3 Komponen Huraian
- Universiti Teknologi Mara (UITM PRISMA)
- Universiti Teknologi Petronas (UTP)
- Universiti Tenaga Nasional (UNITEN)
- Universiti Tunku Abdul Rahman (UTAR)
- Quad-Tech
- Xfero
- myCro
- 3D Printer
- Myduino
- ARTLinks Integrated Network
- UM CRAE
- University College of Technology Sarawak
- KLDX
- Reka Studio
- Mainatec Marketing
- Santac Sdn Bhd
- SD Liew
- Maker Army - Notts Maker Club
- Maker Army - Inti Maker Club
- Maker Army - Umakers
- Simplifi3D Academy Malaysia
- Synapsis



- Crafty Minds
- Tertiary Infotech
- Edujourney
- Pereka
- USM
- I-Discover
- eSentral
- PebbleReka
- LabTanya
- ESPert
- M.A.D.L.A.B
- Biji-Biji
- Creative Wizard
- Goodlife International Sdn Bhd
- Innertalk Sdn Bhd
- Kids Station Marketing
- Love & Learn
- Magic Gamewerks
- Mindbloom Consulting
- Prime Academy Malaysia Berhad
- Prana World Lifestyle Centre
- Silva Method (Malaysia) Sdn Bhd
- Success Edge 4 Komponen Huraian
- Wonder Tree
- Intelligent Society of Malaysia
- Malaysia Memory Sports Organisation
- Malaysia Mental Literacy Movement (MMLM)
- Malaysia Sudoku Society
- Malaysian Association of Creativity & Innovation (MACRI)
- Malaysian Invention & Design Society
- Malaysian Mensa Society
- Mayi Yoga Academy
- Mind Science Association of Malaysia
- Persatuan Permuafakatan Pelibatan Ibu Bapa dan Komuniti Kuala Lumpur
- British Council School Lab, Lab Fame

## 附件二

### KLESF 簡單介紹

Kuala Lumpur Engineering Science Fair (KLESF) 啟動於 2013 年, 目的是為了提高學生對科學, 技術, 工程和數學 (STEM) 興趣它是由四個組織組合而成的:

- Malaysian Industry-Government Group for High Technology (MIGHT)
- ASEAN Academy of Engineering and Technology (AAET)
- Institution of Engineers Malaysia (IEM)
- Universiti Tunku Abdul Rahman (UTAR)



KLESF 主辦很多不同的科學推廣活動, 其中一個項目是 KLESF 年度科學博覽會。第一屆科學博覽會舉辦於 2014 年, 第二屆舉辦於 2015 年, 第三屆舉辦於 2016 年, 第四屆舉辦於 2017 年。在 2017 年, 在為期 3 天的活動中, 博覽會接待了 6 萬多名參觀者

KLESF 2018 將於 2/11/2018 - 4/11/2018, 9am - 6pm 在 MINES International Exhibition and Convention Centre (MIECC), Jalan Dulang, MINES Wellness City, Seri Kembangan, Selangor 舉辦。

#### A. 活動目的:

1. 提高學生對科學, 技術, 工程和數學 (STEM) 的興趣
2. 提高公眾對科學, 技術, 工程和數學 (STEM) 在社會經濟福利, 可持續發展性和重要性的認知
3. 提高工商界對於學生和社區學校和 STEM 相關領域學習和職業發展的認識和參與。  
To enhance the awareness and participation of business and industry in promoting learning and career development in areas related to STEM among school students and community.
4. 為學校, 教育工作者, 工業界, 公營和私營部門提供平台, 分享有關科學教育的信息, 做法和經驗

#### B. 科學博覽會包含項目:

1. 實際操作/示範簡單科學實驗
2. 科學研究項目比賽
3. 科學工作坊
4. 企業科學展覽
5. 非營利組織, 政府相關機構, 大學 & MyMakers 科學展覽
6. 科學魔術表演
7. 14th Malaysia Festival of The Mind 2018
8. 國際參賽
9. 科學知識傳播

## 國際科學研究項目比賽(KLESF International Challenge 2018)

国际科學研究項目比賽要點:

要點	細節
類別	<ul style="list-style-type: none"> <li>• 小学組(12 歲或以下)</li> <li>• 中學組 (13 - 18 歲)</li> </ul>
項目類別	<ul style="list-style-type: none"> <li>• 應用科學</li> <li>• 物理和生物科學</li> </ul>
評分標準	<ul style="list-style-type: none"> <li>• 獨創性和創新性 (25%)</li> <li>• 項目執行 (25%)</li> <li>• 質量和影響 (25%)</li> <li>• 項目的發表 (25%)</li> </ul>
參賽說明	<ul style="list-style-type: none"> <li>• 團隊規模 (1 至 3 名學生+1 名指導老師)</li> <li>• 每所學校排的隊伍數量不限</li> <li>• 每組需填寫參賽表格</li> <li>• <b>不收取報名費</b></li> <li>• <b>每個團隊都須在 3 天的博覽會裡展示</b></li> <li>• 攤位設置將在博覽會前一天完成。主辦單位將提供細節</li> <li>• 每個參賽隊伍將擁有一個攤位，3 張椅子，1 個電插座和 1 米 x 2.5 米的展示板。每個團隊都須負責自己的攤位擺設</li> </ul> <div data-bbox="587 1155 1246 1659" style="text-align: center;"> </div> <ul style="list-style-type: none"> <li>• 每個團隊將在博覽會期間在指定位置展示期項目，無論評估的進度於狀態如何</li> <li>• 評委會將在博覽會期間進行評審</li> </ul>
獎項	<p>根據評審小組的推薦，每個類別將有以下獎項可供獎勵</p> <ul style="list-style-type: none"> <li>• 金獎 (RM 500, 證書)</li> <li>• 銀獎 (RM 200, 證書)</li> <li>• 銅獎 (RM 100, 證書)</li> <li>• 優異 (證書)</li> </ul>

要點	細節
報名截止	2018/06/23
聯絡人	周瑛琪教授 電話: 04-23450121, ext. 22805, 35122 傳真: 04-23590484 電郵: ycchou@thu.edu.tw  王嘉如老師 電話: 0900251680 電郵: d06220702@thu.edu.tw

\*主辦單位可隨情況更改細節

### 研究項目領域例子

項目類別	例子
應用科學	Arduino controlled plant watering system
	Statistics study on the impact of travel time and result of students
	Design of floating concrete platform from recycled material
	Mobile app for school alumni social network
	Software algorithm for lab timetable arrangement
物理和生物科學	Genetic studies on wild grass in school compound
	New catalyst for synthesis of soap
	Study on the use of all natural herbicide for indoor gardening
	Using coconut production waste as biopolymer filter
	Laser light sound visualizer

## **Introduction of Kuala Lumpur Engineering Science Fair (KLESF)**

Kuala Lumpur Engineering Science Fair (KLESF) is an initiative started with the aim of enhancing interest in science, technology, engineering, and mathematics (STEM) among school students. It was started in 2013 by four organizations:

- Malaysian Industry-Government Group for High Technology (MIGHT)
- ASEAN Academy of Engineering and Technology (AAET)
- Institution of Engineers Malaysia (IEM)
- Universiti Tunku Abdul Rahman (UTAR)

One of the programmes initiated is the annual KLESF: The Fair. The fair was first organized in 2014, the second was in 2015, the third was in 2016 and the fourth was in 2017. The events received overwhelming response in which over the 3-day event, more than 60,000 visitors were received.

KLESF: The Fair 2018 will be held from 2 to 4 November 2018, from 9.00 am to 6.00 pm at MINES International Exhibition and Convention Centre (MIECC), Jalan Dulang, MINES Wellness City, Seri Kembangan, Selangor. The fair is expected to attract more than 60,000 visitors this year.

One of the important components of the fair is **School STEM Project Exhibition**. Schools from Malaysia and overseas with STEM projects are encouraged to participate as exhibitors by demonstrating their projects to visitors. An international competition, **KLESF International Challenge 2018** will be held for exhibiting school teams.

### **B. The objectives of KLESF are:**

1. To enhance school students' interest in science, technology, engineering and mathematics (STEM).
2. To enhance the awareness of the public on the roles and importance of STEM in socio-economic wellbeing and sustainable development.
3. To enhance the awareness and participation of business and industry in promoting learning and career development in areas related to STEM among school students and community.
4. To provide networking for schools, educators, industries, public and private sector to share information and experiences on projects, extra-curriculum and good practices in science and mathematics education in schools

### **C. The components of the KLESF:**

1. STEM Hands-on Experiments
2. KLESF Challenge 2018 & Other School Competitions
3. Hands-on Workshops
4. Industry STEM Exhibition
5. NGO , Government, Universities & MyMakers STEM Exhibition
6. Science of Magic
7. 14th Malaysia Festival of The Mind 2018
8. International Participation
9. Science Communication

## KLESF International Challenge 2018

The international competition will be held based on the following:

Items	Details
Category	<ul style="list-style-type: none"> <li>• <b>Primary school</b> (12 years old or below)</li> <li>• <b>Secondary school</b> (13 - 18 years old)</li> </ul>
Project Track	<ul style="list-style-type: none"> <li>• <b>Applied Sciences</b></li> <li>• <b>Physical and Biological Sciences</b></li> </ul>
Assessment criteria	<ul style="list-style-type: none"> <li>• Originality &amp; innovativeness (25%)</li> <li>• Project execution (25%)</li> <li>• Quality &amp; impact (25%)</li> <li>• Project presentation and communication (25%)</li> </ul>
Participation	<ul style="list-style-type: none"> <li>• Team size (1 to 3 student members + 1 project mentor/ teacher)</li> <li>• No limit to the number of teams from each school</li> <li>• Participation form is to be filled up by each team</li> <li>• <b>No fees are charged for participation</b></li> <li>• Each team is required to exhibit throughout the 3-day event</li> <li>• Setting up will be done one day before the commencement of event. Details will be provided by the organizer</li> <li>• Each participating team will be provided 1 info table, 3 chairs, 1 electrical point and a 1m x 2.5m shell board. Each team is responsible to bring other necessities for the setting up its booth.</li> </ul> <div data-bbox="587 1319 1246 1827" style="text-align: center;"> <p>The image shows a 3D perspective view of a white exhibition booth on a blue carpet. The booth consists of a long white table with two black chairs tucked under it. To the right of the table is a tall white shell board. Next to the 3D view is a 2D floor plan diagram of the booth, showing a rectangular layout with a table and chairs area, and a shell board area. The diagram is labeled 'TOP EXHIBITION' and 'REAR EXHIBITION'.</p> </div> <ul style="list-style-type: none"> <li>• Each team is to exhibit its project at the assigned booth throughout the event period regardless assessment progress and status.</li> <li>• Assessment by judges will be carried out during the 3-day event through interview and project presentation at the exhibition booth</li> </ul>



Items	Details
Prizes	<p>For each category, the following prizes will be available for award based on recommendation of the panel of judges.</p> <ul style="list-style-type: none"> <li>• Gold award (RM 500, certificate)</li> <li>• Silver award (RM 200, certificate)</li> <li>• Bronze award (RM 100, certificate)</li> <li>• Merit (certificate)</li> </ul>
Deadline for registration	<b>2018/06/23</b>
Contact	<p>Prof. Ying-Chyi Chou            Tel: 04-23450121, ext. 22805, 35122            Fax: 04-23590484            Email: ycchou@thu.edu.tw</p> <p>Ms Ong Kiah Ju            Tel: 0900251680            Email: d06220702@thu.edu.tw</p>

\* Subject to changes by the Organizer

Example projects:

Category	Example Titles
Applied Science	Arduino controlled plant watering system
	Statistics study on the impact of travel time and result of students
	Design of floating concrete platform from recycled material
	Mobile app for school alumni social network
	Software algorithm for lab timetable arrangement
Physical and Biological Sciences	Genetic studies on wild grass in school compound
	New catalyst for synthesis of soap
	Study on the use of all natural herbicide for indoor gardening
	Using coconut production waste as biopolymer filter
	Laser light sound visualizer



**Particulars of Project Mentor and Students:**

<b>Teacher/Mentor</b>	Full Name: (Dr/Ms/Mr)	
	Contact Number:	
	Email :	
	Name of school:	
<b>Student #1</b>	Name:	Contact Number:
		Email :
<b>Student #2</b>	Name:	Contact Number:
		Email :
<b>Student #3</b>	Name:	Contact Number:
		Email :
<b>Name of School</b>		
<b>School Address</b>		

**Closing Date for Registration: 2018/06/23**

**Please return completed form to:**

Prof. Ying-Chyi Chou  
Fax: 04-23594107  
Email: ycchou@thu.edu.tw

Ms Ong Kiah Ju  
Email: d06220702@thu.edu.tw

科學博覽會 KLESF: The Fair 2018 (2 – 4/ Nov / 2018)

姓名	聯絡方式 (1) 手機號碼 (2) Line ID (3) Wechat ID	Email (1) 校外 (2) 校內	學校資料 (1) 學校名稱 (2) 職稱/年級	性別 (1) 男 (2) 女	餐點 (1) 葷 (2) 素	住宿(請見備註) (1) 依大會安排 (2) 請代安排星級飯店

備註：(1)住宿(多人共住)四天(11月1-5日)、活動期間(三天)的三餐、機場接送以及當地交通等費用，計500馬幣(約台幣3770元)。

(2)若需待安排星級飯店，將委託旅行社代訂，每晚約2600台幣，不含三餐。(活動會場周邊有餐館)

報名截止日期: 2018/06/23 並將此表以 email 回傳

周瑛琪教授電話: 04-23590121 ext. 35122 傳真: 04-23594107 電郵: [ycchou@thu.edu.tw](mailto:ycchou@thu.edu.tw)

王嘉如老師電郵: d06220702@thu.edu.tw

**KLESF: The Fair 2018**  
**(2<sup>nd</sup> – 4<sup>th</sup> November 2018)**  
**ENTRY FORM**

**Particulars of teachers and Students:**

Full Name	Contact Number (1) Cell phone (2) Line ID (3) Wechat ID	Email	School information (1) Name of school (2) position	Gender (1) Boy (2) Girl	Meal (vegetarian/ nonvegetarian)


**Closing Date for Registration: 2018/06/23**

**Please return completed form to:**

Prof. Ying-Chyi Chou  
Fax: 04-23594107  
Email: ycchou@thu.edu.tw

Ms Ong Kiah Ju  
Email: d06220702@thu.edu.tw



項目指導老師和學生的詳細資料：

指導老師	名字:	
	聯繫號碼:	
	電郵:	
	學校:	
學生 #1	姓名:	聯繫號碼:
		電郵:
學生 #2	姓名:	聯繫號碼:
		電郵:
學生 #3	姓名:	聯繫號碼:
		電郵:
學校		
學校地址		
住宿(請見備註)	<input type="checkbox"/> 依大會安排 <input type="checkbox"/> 請代安排星級飯店	

備註：(1)住宿(多人共住)四天(11月 1-5 日)、活動期間(三天)的三餐、機場接送以及當地交通等費

用，計 500 馬幣(約台幣 3770 元)。

(2)若需待安排星級飯店，將委託旅行社代訂，每晚約 2600 台幣，不含三餐。  
(活動會場周邊  
有餐館)

報名截止日期: 2018/06/23

表格請繳交到:

周瑛琪教授

傳真: 04-23594017

電郵: ycchou@thu.edu.tw

王嘉如老師

電郵: d06220702@thu.edu.tw







**Particulars of Project Mentor and Students:**

<b>Teacher/Mentor</b>	Full Name: (Dr/Ms/Mr)	
	Contact Number:	
	Email :	
	Name of school:	
<b>Student #1</b>	Name:	Contact Number:
		Email :
<b>Student #2</b>	Name:	Contact Number:
		Email :
<b>Student #3</b>	Name:	Contact Number:
		Email :
<b>Name of School</b>		
<b>School Address</b>		

**Closing Date for Registration: 2018/06/23**

**Please return completed form to:**

Prof. Ying-Chyi Chou  
Fax: 04-23594107  
Email: ycchou@thu.edu.tw

Ms Ong Kiah Ju  
Email: d06220702@thu.edu.tw