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**OFFICE OF
POSTGRADUATE STUDIES**



e-ISSN: 2710-7256

**Dec 2024
VOL.6 NO.6**

A Corporate Social Responsibility - CSR event hosted by Engineers in society 1-3 JULY 2024, FETBE



Asst Prof Dr Ramani Bai Varadharajan has built an illustrious career over 31 years, making significant contributions to Environment and Water Resources Engineering (EWRE). Her expertise is reflected in the publication of two books, 101 conference papers, 18 journal articles and 15 book chapters. Additionally, her innovative work has led to two patent grants and three copyrights. She has been recognised with 10 prestigious awards in EWRE and is currently an assistant professor in the Faculty of Engineering, Technology and the Built Environment at UCSI University in Kuala Lumpur, Malaysia. Through her teaching and mentorship, she continues to inspire the next generation of professionals.

The InCSR project was held from July 1 to 3, 2024. Dedicated to reducing landfill waste and promoting a circular economy, it aimed to raise awareness and equip the community with practical skills in recycling, as well as the sales of recycled, upcycled and downcycled products. This event marked the beginning of a journey towards sustainability, community empowerment and environmental responsibility involving the engineering students and staff of UCSI.



Tn Hj Mansor Abd Ghani

Deputy honorary secretary,
Friends of Rivers

Topic

River Rehabilitation



Kenneth Ch'ng

Founder of Malaysia Origami Association
and Malaysia Origami Academy
Guest speaker

Topic

Origami in Engineering



Eriko Motoyama

Programme director of SlopeWatch

Topic

Living with Landslide Risk and What Communities Can Do



Jolene Journée

Green Step Malaysia

Topic

The Practice of Proper Waste Segregation and Recycling Initiatives with Stakeholder



Abdul Hanan Abdul Mokti and Raja Amir Hamzah

**Jaringan Rawang Tolak
Insinerator JRTI
Guest speakers**

Topic

Incinerators from the Public's Perspective



Salihah Surol

**Academic Lecturer
UCSI FETBE
Civil Engineering Department**

Topic

Supporting Local Government and Recycling Initiatives

Committees involved in the event



Activities

Sale of Recycled and Upcycled



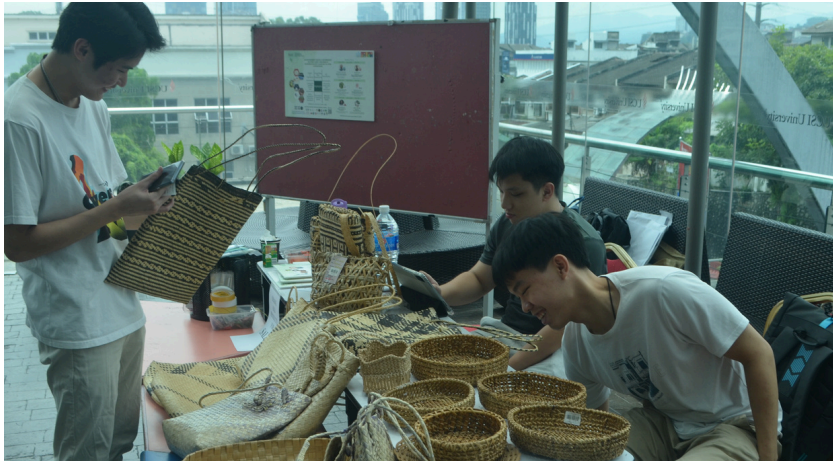
Over three days, the team sold items sourced from an environmentally conscious store in Shah Alam, Malaysia. By assisting in selling these products, the team contributed to improving waste and landfill management in the country by addressing one of the key causes of land pollution; the disposal of items that could be reused. This aligns with the core principles of waste management implemented in many countries, namely to reduce, reuse and recycle. The items that were sold were made from reused materials collected from environmentally conscious citizens in Malaysia and repurposed into practical products to help reduce landfill waste and promote an eco-friendly lifestyle.

Origami in Engineering

The Origami Folding Workshop provided a comprehensive introduction to origami with a focus on Kirigami and tessellation. It taught various techniques while exploring practical applications of origami in engineering, architecture and design. Participants engaged in hands-on sessions, learning to fold intricate shapes while improving hand-eye coordination, enhancing motor skills and stimulating creative thinking and problem-solving. The workshop aimed to raise awareness of origami's benefits beyond its traditional perception, highlighting its integration into scientific fields and its practical value in modern technology and innovation.



Orang Asli Hand Made Crafts



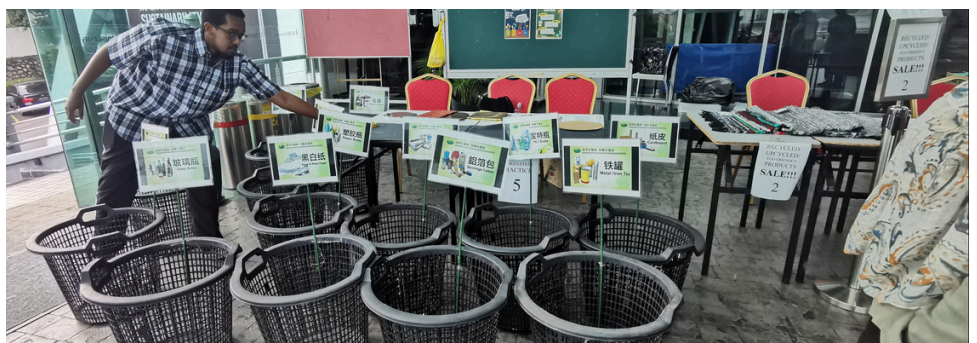
At the CSR event, a booth promoted Orang Asli products, offering the team a rare opportunity to learn about indigenous craftsmanship. The Orang Asli from Malaysia, have a rich cultural heritage, with their weaving using rotan as a unique form of self-expression. Although no profits were made, the experience provided invaluable insights to the team. Going forward, further efforts will be made to support the legacy by purchasing these traditional products and introducing them to more people.

Sponsors



How to Sort Your Recyclables

The primary objectives were to raise awareness about recycling, provide information on what can and cannot be recycled, set up collection containers for various recyclables and promote upcycling. Interactive recycling games were also organised to engage the community, with students competing to identify the correct recycling bins for different waste items. This hands-on approach reinforced recycling knowledge while making learning enjoyable for everyone involved.

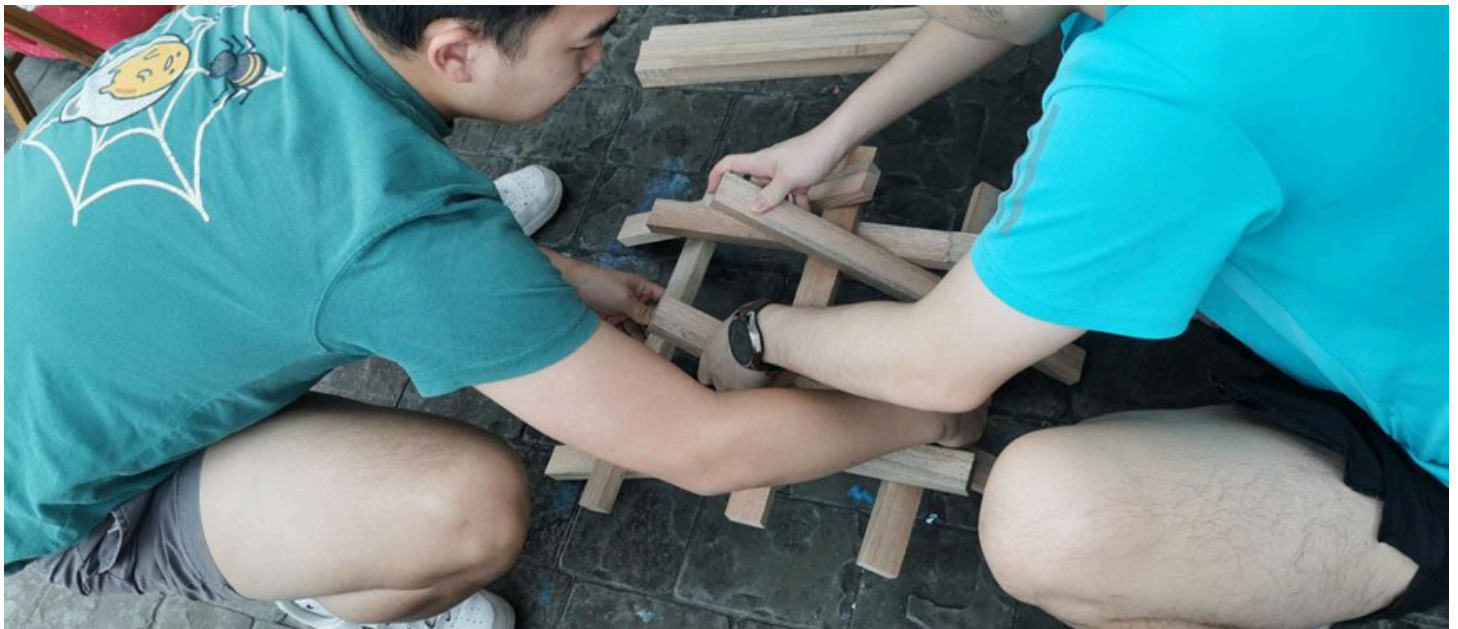


Plants/Stray Animals Booth



This particular booth sold plants, pet items and healthy snacks from Belly Happy, a social enterprise aimed at empowering women. It also hosted adoption drives for spayed stray cats and rabbits to promote responsible pet ownership. The booth also aimed to encourage greening of spaces, fundraise for Zero Landfill Environment activities and raise awareness about the challenges faced by stray and abandoned cats and other pets.

ICE Booth (Civil Engineering)



This booth educated participants on the historical significance and practical applications of the Da Vinci Bridge. Volunteers led sessions on its history, construction methods and relevance in modern engineering, while hands-on activities allowed participants to experiment with different configurations. This allowed participants to foster an appreciation for building structures and experience firsthand the challenges and rewards of building with basic materials. Through the initiative, the booth supported SDG 9 by promoting innovation and infrastructure development, inspiring future engineers and architects.

The International Art Camp in Pahang, Malaysia. 15-18 October 2024



Asst Prof Dr Reza Moayer teaches at the Institute of Creative Arts and Design at UCSI University, with a PhD in Public Art from IIUM. He is known for his thesis titled, "Formation of Mural Arts in the Contemporary Urban Scene of Greater Kuala Lumpur,". His research interests include fine art, public art, mural arts, cross-cultural studies, sacred art and mysticism. An internationally recognised artist, Dr Moayer has experience in painting, sculpture, ceramics, printmaking and mural arts, with 14 solo exhibitions and over 80 group exhibitions in the USA, Italy, Spain, Iran, Indonesia and Malaysia. With 37 years of teaching experience, he has taught at all levels, from preschool to university, in Iran, Italy and Malaysia, bringing a global perspective to his art practice, research and teaching.

Introduction

The International Art Camp, held at Lang Buana Eco Park in Ulu Cheka Village, Pahang, Malaysia, brought together artists, creators and art enthusiasts from diverse backgrounds. Organised by several institutions, namely the Ministry of Tourism, Arts and Culture (MOTAC), the Pahang State Government, and the National Art Gallery, the four-day event celebrated Malaysia's rich artistic heritage and promoted cultural exchange.

Set amidst the lush Malaysian jungle, the camp provided a tranquil environment for creativity and collaboration. It also featured ten esteemed art lecturers and artists from top Malaysian universities, including UCSI, UM, UPSI, UiTM and ASWARA, who enriched the event with their expertise.

Event Overview

The art camp provided both international and local participants with an immersive experience, blending traditional and contemporary art forms. It also served as a platform to explore diverse techniques while highlighting the importance of cultural narratives in shaping community identity. Through its strategic location in the heart of nature, the camp fostered creativity through its serene environment, with several workshops held in the jungle to deepen the connection between art and the natural world. A key highlight was the interaction between artists, students and the environment, illustrating the harmony between creativity and the landscape. The camp also welcomed over 40 artists from Malaysia, Iran, India, China and Japan, along with more than 400 students from the preschool to university level.

Workshops combined traditional techniques with contemporary artistic practices:

Kufic Calligraphy Painting: Mastering the precision of Islamic script and its integration into modern art.

Wooden Sculpture Crafting: Crafting sculptures using materials collected from the jungle.

Malaysian Traditional Boat Making: Constructing miniature models inspired by Malaysia's maritime heritage.

Watercolour Painting: Learning diverse techniques to portray tropical landscapes.

Drawing: Sketching tropical fruits and the surrounding environment.

Malaysian Traditional Cooking: Preparing and savouring local dishes.

Stone Painting: Transforming natural stones into colourful canvases.

Sand Sculpture: Crafting ephemeral designs to celebrate creativity and teamwork.

Mural Art: Collaboratively designing murals that reflect shared cultural narratives.

Ceramics and Clay Sculptures: Exploring pottery and clay modelling for functional and expressive creations.

Batik Workshop: Experimenting with Malaysia's iconic wax-resist dyeing technique.





Nurul Hanis Mohd Fikri is a lecturer in Culinary Arts and Pastry at the School of Hospitality and Tourism Management at the UCSI University Springhill Campus. She holds a Master's degree in Foodservice Management from Universiti Teknologi MARA (UiTM). She previously served as a research assistant at UiTM Shah Alam from 2019-2020, for a project titled "Profiling the Culinary Heritage of the Chetti Ethnic (Peranakan India) Malacca,". In 2021, she published an article titled "Exploring Culinary Heritage Practices Among the Younger Chetti Generations in Melaka" into the Journal of Ethnic Foods. She has expertise in both learning and practicing culinary arts and has conducted research on Peranakan cuisine in Malaysia, with a particular focus on the Peranakan Chetti community in Melaka.

CHETTI PERANAKAN CULINARY HERITAGE Historical and Cultural Background

Malaysia's cultural diversity showcases its rich history of blending local and immigrant ethnic groups within the Malay Archipelago. Amongst these lesser-known communities is the Chetti, or Indian Peranakan, a minority ethnic group distinct from the more widely recognised Baba-Nyonya community. The Chetti community emerged centuries ago from the intermarriage of South Indian traders and local Malay women in the Malay Archipelago. During the pre-colonial period, Indian traders who settled in the region formed a unique mixed-ethnic group. This fusion of cultures led to the development of a unique identity that seamlessly combines Indian, Malay and Peranakan influences



The Chetti community's cultural fusion is reflected in their language, traditions and culinary practices. Their culture combines elements of South Indian heritage, including Hindu religious customs, with Malay influences such as their traditional attire and language. This combination of cultures has fostered a unique lifestyle that exemplifies the seamless fusion of different cultural influences into a singular identity.

Within the Chetti culture is its unique and diverse cuisine. It combines South Indian cooking methods with Malay ingredients, resulting in distinctive flavours created through the use of spices, coconut milk and local herbs. This distinctive fusion of cuisines not only emphasises the historical ties between cultures but also reflects the safeguarding of traditions handed down through generations. Despite its rich flavours and significance, it has yet to achieve the recognition it deserves, presenting an opportunity to celebrate and preserve this part of Malaysia's vibrant cultural tapestry.

Signature Dishes and Ingredients

Limited primarily to home cooking and occasional cultural showcases, Chetti food is considered a hidden treasure. The origin of Chetti cuisine and its distinct culinary traditions traces back to the 15th century in Melaka. South Indian merchants who settled in the region married local women, leading to a fusion of cultural elements. These local wives adapted and innovated by combining native ingredients with foreign culinary influences to create new dishes that suited their husbands' tastes. Chetti cuisine reflects strong Malay and Peranakan influences, particularly from the Baba-Nyonya community. Signature dishes include pindang ikan parang, sambal telur belimbing, pindang nenas udang, timun cili cuka, lauk campur-campur, urap kulit timun, ikan goreng cili garam and cencaluk. Native Malay ingredients such as lemongrass, galangal, turmeric and coconut milk are staples in Chetti cooking, alongside the use of ikan parang (wolf herring fish), a common local and fresh ingredient.



Pulut tekan (left); Lauk campur-campur (middle); Sambal telur belimbing (right) Source: authors (2020)

A notable identity dish of Peranakan Chetti is pindang, which differs from its Malay counterpart. While the Malay pindang, also known as singgang is typically light and uses sliced spices and no coconut milk, the Chetti version is rich and creamy. This pindang dish includes a finely blended spice paste cooked in rich coconut milk, with wolf herring being the fish of choice.



Chetti pindang (left) Source: authors. Sep 2020. Malay style pindang@singgang (right) Source: Fazida (2023)

Chetti cuisine stands out from traditional Indian cooking due to its unique use of spices. Chetti cuisine differs from Indian cooking, in that it incorporates fresh Malay wet spices such as chili, turmeric, lemongrass, galangal, ginger and torch ginger. Dry Indian spices and curry powder are used minimally, primarily in dishes like mutton and chicken curries, which are typically prepared for special occasions such as festivals and ceremonies. Even though the Chetti community practices Hinduism, the food served during their religious ceremonies is distinct from Indian festival dishes. In addition to Indian-style curries, the menu prominently features Malay-inspired dishes like rendang, kuih (traditional cakes and pastries) and nasi lemak (coconut milk rice). Nasi lemak is particularly significant in Chetti celebrations, such as Bhogi Parachu. However, unlike the Malay version, which includes condiments like sambal, fried peanuts, anchovies, and boiled egg, Chetti nasi lemak is served plain. Another hallmark of Chetti cooking is the use of the batu giling (millstone) to create smooth and fine spice pastes.

Pindang Recipe by Mrs Pillay (2020)

Main ingredients:

730g wolf herring fish (cut into four pieces)
1.5 kg coconut milk
One cup water
115 ml tamarind juice
Salt to taste

Pindang paste ingredients (preferably ground using millstone):

220g Shallots
15g Ginger
Four lemongrass stalks
Seven garlic cloves
3g Red chilli
Four Nos Dried chilli paste
15 g Fresh turmeric

Steps:

1. First, combine the pindang paste ingredients, tamarind water mixture, coconut milk and water in a pot before turning on the heat.
2. Once the heat is on, lower the heat and let the coconut milk mixture come to a boil.
3. Add the ground chili and season with salt. Let it simmer gently over low heat.
4. Finally, add the wolf herring fish and allow it to cook in the simmering coconut milk broth over medium heat.
5. Once the fish is cooked, turn off the heat and it's ready to be served.

REFERENCES

- Fikri, M.N.H. and Rahman, A.E. and Noh, I. (2021). Exploring culinary heritage practices among the younger Chetti generations in Melaka. *Journal of Ethnic Foods*. 8. 10.1186/s42779-021-00101-8.
- Ali, M. (2019). *Cultural Hybridity in the Malay Archipelago: An Ethnographic Study of Chetti Communities*. Kuala Lumpur: EthnoPress.
- Hassan, R. (2020). "Intercultural Marriages and the Formation of Peranakan Communities." *Journal of Southeast Asian Studies*, 51(3), 215-230.
- Ramasamy, K. (2021). "Chetti Cuisine: A Culinary Heritage of Fusion." *Malaysian Culinary Heritage Journal*, 8(2), 45-60.

EVALUATION OF PROPERTIES OF EMPTY FRUIT BUNCH FIBER ASH BASED DRILLING MUD



Jordie Lijadi is a professional engineer who is 24 years old. He is a graduate student of UCSI University, where he received a Bachelor of Petroleum Engineering with Honours. During his time as an undergraduate student, he was able to build a solid foundation in engineering concepts, notably in fields like as drilling engineering, petroleum geology and reservoir management. He is now doing his masters in Master in Engineering (Smart Engineering Management)

Supervisor:



Asst Prof Engr Dr Shafiq Mian Umer is a researcher with a focus on petroleum engineering, particularly in areas such as acid stimulation, enhanced oil recovery and reservoir rock characterisation. His work extensively explores the use of advanced acidizing techniques to improve reservoir permeability and productivity, including the evaluation of alternative acid combinations for sandstone acidizing to optimise reservoir performance. His research also addresses the chemical impacts of these processes on rock properties, contributing to sustainable and efficient oil recovery methods.

ABSTRACT

Drilling fluid plays a crucial role in maintaining wellbore stability, ensuring that drilling activities can progress to the desired depths without risking a blowout. The effectiveness of drilling fluids is essential for the success of the drilling programme. Key properties, such as density, gel strength, viscosity and yield point, were compared in this study as important indicators of drilling fluid performance. Optimising these parameters is necessary to enhance the efficiency of the fluid. Recently, Empty Fruit Bunch (EFB) has shown considerable promise as an additive to improve drilling fluid properties, thanks to its unique molecular structure, capacity for reservoir stimulation, and potential to enhance oil recovery. EFB has been widely used in oilfield applications for decades. In this study, water-based mud was used as the drilling fluid. The use of EFB fibre ash as an enhancer for drilling fluid properties has become particularly promising due to its natural origin, anti-corrosive properties in wells and ability to stimulate reservoirs and improve oil recovery.

This research used water mud as a type of drilling fluid. The purpose of this study is mainly to form Empty Fruit Bunch (EFB) fibre ash and identify its properties relevant to the enhancement of the drilling fluid. Multistage tests in a drilling laboratory were used to achieve these objectives. To evaluate the drilling fluid's performance after adding EFB fibre ash and achieve the study's objectives, experimental equipment such as a Hamilton Beach mixer, mud balance, and viscometer were used. The American Petroleum Institute (API) specifications, API RP 13B-1; Recommended Practice Standard Procedure for field testing water-based drilling fluid, was utilized to ascertain the results for mud density and rheological properties including plastic viscosity, yield point and gel strength. The results indicate that water-based mud is a suitable base fluid for use in drilling operations that are less expensive and safer for the environment.



Figure 1. EFB before the burn



Figure 3. The ash of EFB after the burn

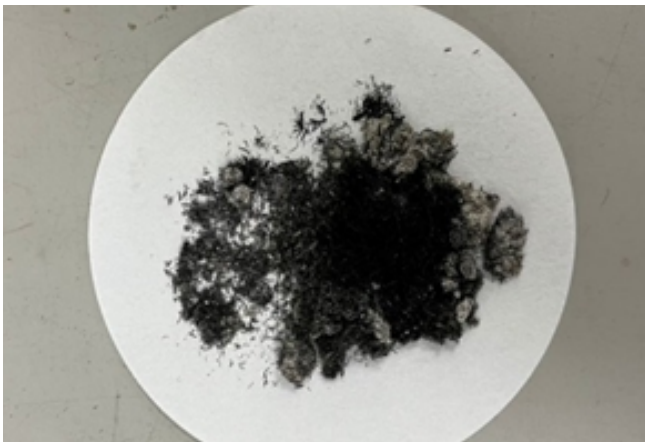


Figure 2. EFB after the burn

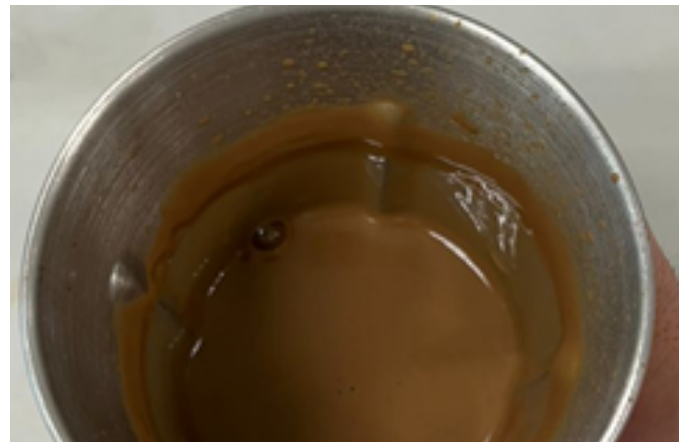


Figure 4. The mud

Conclusion

The objectives of this study were achieved through the evaluation of experiments and analyses. The effect of the additive, EFB fibre ash, was investigated and it was found that the addition of EFB fibre ash improved drilling operations compared to samples without it. The rheological performance of the drilling fluid and the results of various studies suggest that EFB fibre ash can enhance the stability and performance of the drilling mud, leading to more efficient drilling processes and potentially reducing operational costs. These objectives were met through careful analysis, formulation, and comparison of the rheological properties. Overall, EFB fibre ash shows promise as an environmentally friendly and cost-effective additive for drilling mud.

No	Funding scheme	Submission closing date
1	Global Funding for Rubber Innovation https://www.myrubbercouncil.com/globalrubberfund/index.php	Open year round
2	Industry Linkage Fund (ILF) https://www.myrubbercouncil.com/industrylinkagefund/	Open year round
3	MOSTI Grants https://sdb.mosti.gov.my/sdbcms/ms/garispenduan/	Open year round
4	Fundamental Research Grant Scheme (FRGS)	To be announced soon

Please refer to your respective Head of Research for more information

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Contact

Centre of Excellence for Research, Value Innovation and Entrepreneurship (CERVIE)

Floor 10, Block G, UCSI University,
No 1, Jalan UCSI, UCSI Heights
56000 Cheras, Kuala Lumpur, Malaysia

Tel: +603 9101 8880 (ext: 2256)

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